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CLARK UNIVERSITY

Worcester, Massachusetts



Announcement of the
Graduate School of Chemistry

Graduate School of Chemistry

CLARK UNIVERSITY

Worcester, Massachusetts.

The Department of Chemistry offers advanced courses in the fundamental principles of physical, organic, inorganic, and analytical chemistry and radiochemistry. These are supplemented by specialized courses and research work in physical and organic chemistry and radiochemistry. The graduate program is designed to lead to the degrees of Master of Arts and Doctor of Philosophy. Besides a successful completion of the fundamental courses offered in the graduate school, candidates for both degrees must show facility in conducting a laboratory investigation and a command of the subject which is chosen for the thesis or dissertation.

Admission to the Graduate School

Students whose undergraduate record shows a B average are ordinarily considered for admission to the graduate school and are eligible for tuition scholarships, assistantships, and financial stipends in the form of predoctoral fellowships as well. Those who have already obtained the master's degree at another institution must also present transcripts of their undergraduate records and this is given considerable weight in deciding on the candidates' qualifications.

Faculty

Jesse L. Bullock, Ph. D., Professor of Chemistry and Director of the Chemical Laboratories. A. B., Harvard University, 1914; A. M., 1928; Ph. D., 1932. Assistant Professor, 1926-32; Associate Professor, 1932-37; Professor since 1937 (February).

Arthur E. Martell, Ph. D., Professor of Chemistry. B. S., Worcester Polytechnic Institute, 1938; Ph. D., New York University, 1941. Assistant Professor, 1942-46; Associate Professor, 1946-51; Professor since 1951.

Gerson Kegeles, Ph. D., Associate Professor of Chemistry. B. S., Sheffield Scientific School, Yale University 1937; Ph. D., Yale University, 1940. Associate Professor since 1951.

Thomas T. Sugihara, Ph. D., Assistant Professor of Chemistry. A. B., Kalamazoo College, 1945; S. M., University of Chicago, 1951; Ph. D., 1952. Assistant Professor since 1953.

Courses

All courses listed are semester courses except 300, 350, and 380, given through the year. Course numbers are consistent with the Clark University catalog for 1955-56.

300. *Research*

The Staff

310. *Molecular Structure* (G. Low)

Theories of electronic structure and relationship between chemical binding and physical properties of various substances. Dipole moments, magnetic properties, bond energies and stereochemistry of organic and inorganic compounds.

Mr. Martell

311. *Reaction Mechanisms*

Electronic interpretations of chemical reactions, acid-base concepts and solution catalysis, free-radical and ionic mechanisms.

Mr. Martell

Chemistry 310 and 311 offered together in alternate years.

320. *Advanced Physical Chemistry (A.L.)*

Selected topics in physical chemistry described in detail: introduction to thermodynamics, phase rule, chromatography, electrochemistry, Debye-Hückel theory.

Mr. Kegeles

321. *Colloid Chemistry*

Osmotic and sedimentation equilibrium. Sedimentation velocity; diffusion.

Mr. Kegeles

Chemistry 320 and 321 offered together in alternate years.

322. *Thermodynamics*

Applications of classical thermodynamics to chemical systems.

Mr. Kegeles

323. *Statistical Mechanics*

Statistical mechanical analogs of thermodynamic functions and their application to chemical systems.

Mr. Kegeles

Chemistry 322 and 323 offered together in alternate years.

330. *Advanced Organic Chemistry*

Effects of functional groups on synthesis.

Mr. Bullock

331. *Organic Chemical Reactions*

Lectures on the fundamental reactions in organic chemistry.

Mr. Bullock

Chemistry 330 and 331 offered together in alternate years.

332.) *Heterocyclic Compounds*

333.)

Mr. Bullock

Chemistry 332 and 333 offered together in alternate years.

340. *Quantum Chemistry*

Elementary wave mechanics, application to atomic spectra, kinetic theory and statistics, molecular spectra, crystalline solids, imperfect gases and liquids.

Mr. Sugihara

341. *Advanced Inorganic Chemistry*

Periodic classification of many-electron atoms, chemical and physical properties of atoms and simple ions as functions of electron structure, solid state chemistry, solvents and solution phenomena.

Mr. Sugihara

Chemistry 340 and 341 offered together in alternate years.

342. *Radiochemistry* (266)

Fundamentals of nuclear physics, including nuclear structure, modes of radioactive decay, interaction of nuclear particles with matter. Radiochemical techniques of production, isolation, and identification of radioactive atoms, introduction to techniques of preparation and measurement of radioelements, applications to problems in chemistry and physics.

Mr. Sugihara

343. *Principles of Analytical Chemistry*

Theories of titrations, indicators, and pH measurement, titration in non-aqueous solvents, equilibrium theory of chromatography, ion-exchange resins, solvent extraction, theories of gravimetric analysis, principles of some instrumental analytical methods.

Mr. Sugihara

344. *Chemistry of Less Familiar Elements*

Lectures on the inorganic and physical chemistry of elements not ordinarily studied in undergraduate courses, analytical methods, kinetics, equilibrium constants.

Mr. Sugihara

Chemistry 342 offered in alternate years together with either Chemistry 343 or Chemistry 344.

350. *Seminar* (2 hours)

Reports on research work being performed in the laboratory and reports and discussions of recently published work in related fields.

Staff and Graduate Students

360. *Coordination Compounds*

Lectures on the chemical properties of metal complexes, with emphasis on recent developments in the field of metal chelate compounds.

Mr. ~~Chaberek~~ MARTELL

361. *Principles of Instrumental Analysis*

A study of the principles involved in the use of analytical instruments, including potentiometry, infrared and ultraviolet absorption spectrophotometry, and polarography.

Mr. Chaberek

380. *Current Topics in Chemical Literature* (1 hour)

Staff and Graduate Students

Course Requirements

All graduate students are required to demonstrate an adequate reading knowledge of French and German prior to entrance into candidacy for the Ph. D. degree. Although this requirement may be met as late as the time of completion of M. A. requirements, experience has demonstrated that failure of the student to fulfill these requirements early in the course of graduate studies can act as a serious deterrent to satisfactory progress. It is therefore recommended that entering students prepare themselves for examination in at least one language at the beginning of the first semester of graduate studies.

Students registered for advanced degrees are expected to spend not less than eighteen hours per week in the laboratory. This may include special laboratory work in organic, organic-physical, radiochemistry, or physical chemistry.

A total of 16 semester courses in chemistry are offered in addition to the seminar, chemical-literature survey, and research. Eight semester courses are offered each year in addition to courses 350 and 380. Courses 310, 311, 320, 321, 330, 331, 340 and 341 are fundamental courses and are required for qualification for the Ph. D. degree. The graduate program normally consists of six semester courses per year in addition to seminar and research, with the exception of the final year of Ph. D. candidacy, when it is generally expected that the student will be free to devote his major effort toward the completion of his research program. Two of these six courses may be taken in the related fields of mathematics and physics. Graduate students normally participate in Chemistry 380 after their first year. Participation in seminar is required, but does not carry credit. Emphasis is placed on research work from the time of the student's entrance into the Department. A thesis is required for the master's degree as well as for the doctor's

degree. The length of time required for the master's degree is ordinarily three semesters because eight semester courses are required in addition to research work upon which the thesis is based. For the doctor's degree no time limit can be specified, but normally at least three years beyond the bachelor's degree are required for the completion of the research work.

Since the length of time necessary to make satisfactory progress in the research is indeterminate, the student may complete the work for the doctor's degree without reference to the academic year. On completion of such work, the student receives a certificate from the Department which allows him to take up a position at once, and he then receives the formal diploma at the next commencement. The requirements for the doctor's degree include a reading knowledge of French and German, preliminary oral examinations, and a dissertation followed by an oral defense when the dissertation is complete.

Graduate Fellowships and Scholarships

A number of scholarships are available which cover tuition, laboratory fees, and supplies. In addition, teaching assistantships are available which require not more than six hours per week of the student's time, and further financial assistance is supplied in the form of predoctoral fellowships sponsored by the University or by various research grants. Summer fellowships are available to allow students to pursue their research work more actively than is possible during the regular school year. Assistantships and fellowships are allotted individually on the basis of the student's record. The maximum rate, including summer work, is \$1500 per year in addition to remission of tuition (\$600) and laboratory fees, for an 11-month program.

Research

The Department offers research work in organic, physical-organic, radiochemistry and physical chemistry in the following fields of investigation:

Synthesis and chemical properties of organic sulfur compounds and aromatic amines.

Synthesis of amino acids and other metal-ion complexing agents.

Dipole moments of metal chelate compounds.

Thermodynamic properties of metal chelate compounds.

Dissociation constants of weak electrolytes from electromotive force measurements.

Infrared and ultraviolet absorption spectra of metal chelate compounds.

Diffusion of electrolytes, amino acids and peptides in water.

Sedimentation of proteins and smaller molecules.

Chromatographic analysis of proteins and their cleavage products.

Radiochemical yields of products in the deuteron-induced fission of natural uranium.

Chemical effects of nuclear transformations.

Radiochemical applications to analytical chemistry.

Publications

Some pertinent publications of present faculty members and their associates follow:

The Vapor Phase Nitration of Toluene, J. L. Bullock and E. T. Mitchell, *J. Am. Chem. Soc.* 63, 3230 (1941).

The Theory of an Interference Method for the Study of Diffusion, G. Kegeles and L. J. Gosting, *J. Am. Chem. Soc.* 69, 2516 (1947).

The Preparation and Properties of some N, N'—Disubstituted ethylene-diaminedipropionic Acids, A. E. Martell and S. Chaberek, Jr., J. Am. Chem. Soc. 72, 5357 (1950).

A study of the Structure of a Sulfur Dye and its Intermediates, J. L. Bullock and B. Baum, Abstracts of Doctoral Dissertations, Clark University, 1950.

Ionic Conductances in Ethylidene Chloride, F. H. Healey and A. E. Martell, J. Am. Chem. Soc. 73, 3296 (1951).

The Determination of Sedimentation Constants from Fresnel Diffraction Patterns, G. Kegeles and F. J. Gutter, J. Am. Chem. Soc. 73, 3770 (1951).

Automatic Recorder for Interferometry and Refractometry of Streaming Solutions Applicable to Chromatographic Analysis, G. Kegeles and H. A. Sober, Anal. Chem. 24, 654 (1952).

Negative Pion Activation of Bromine, T. T. Sugihara and W. F. Libby, Phys. Rev. 88, 587 (1952).

Decay Scheme of Natural Lutetium 176, J. R. Arnold and T. T. Sugihara, Phys. Rev. 90, 332 (1953).

Thermodynamic Quantities Associated with the Interaction between Ethylenediaminetetraacetate and Alkaline-Earth Ions, F. F. Carini and A. E. Martell, J. Am. Chem. Soc. 76 (1954).

CLARK UNIVERSITY

Sixty-seventh Annual Commencement

Worcester Memorial Auditorium

SUNDAY, JUNE 9, 1957



WORCESTER, MASSACHUSETTS

Order of Exercises

Prelude

Allegro Moderato

Handel

Arioso

Bach

Processional

Grand March (from *Tannhauser*)

Wagner

Invocation

THE REVEREND CHARLES LYNCH PHILLIPS

Welcome by the President

DR. HOWARD BONAR JEFFERSON

Commencement Address

DR. ROBERT ULICH

James Bryant Conant Professor of Education,
Harvard University

Conferring of Degrees

Benediction

THE REVEREND MR. PHILLIPS

Recessional

Festival March

Best

*The audience will kindly remain
standing during the Recessional*

Organist: Clifford Fowler Green

Candidates for the Degree of Bachelor of Science in Business Administration

John Francis Killoran
Raymond Kenneth Moran

Royal Francis Paquette
Henry Clarence Rivers

Candidates for the Degree of Bachelor of Science in General Studies

Barbara Jeanne Coté
Alice Veronica DePaul
Richard Paul Freeman

Richard Charles Maguire
Leonard Francis Sears
Alice Pailoon Shamgochian

Candidates for the Degree of Bachelor of Business Administration

David Bernard Brennan
Peter Baird Chamberlain
Donald William Charlesworth
Richard Wendel Parsons
Clinedinst
*Lee Durant Dahlstrom
Robert William Dawson
Michael Stephen Dedes
*Ginés del Olmo
Ellis David Dworman
Lawrence Freed
Richard Francis Galvin
William John Gauld, Jr.
Richard Leonard Gremley
Christine Mary Hadjoglou
*Roy Lees Harper, Jr.
Donald Melvern Johnson
John Nasto Katori

Nunzio Anthony Lamberto
Frank Milton Look
Eugene Emile Loubier
Milton Stanton Marks
David Earl Maxham
Richard John Millington
Paul Paltrineri, Jr.
John Ronald Pitt
James John Saitas
Robert Ulysses Sawtelle
~~Irving Bernard Sokov~~
Arnold Newton Spurr
Frederick Henry Starzyk
Carl Robert Swenson
Joseph Ludger Toussaint
Charles Bradley Vinkemulder
Richard Terence Wiley

Candidates for the Degree of Bachelor of Business Administration with Honors

Departmental Honors

Paul Jay Shapiro, *Business Administration*

Cum Laude

Milton Howard Raphaelson
Philip Carleton van Leeuwen

**As of June 3, 1956*

Candidates for the Degree of Bachelor of Arts

Silverio Pedro Almeida	*Ira Stephen Lawrence
William Neil Aulson	Arthur Brown Lee, Jr.
Joyce Ann Baker	Bruce Edward Levison
Joseph Irvin Berman	David Lawrence Lipkin
Charles Irving Bloomgarden	Joan Ann Litsky
Lewis Eugene Bogage	John Leo Loughlin
Robert Aram Bogigian	Janyce Anne Mielke
*Jerome Jerald Bolten	*Mary Byrne Morgan
Marshall Holland Bruce	Donald Lyman Morrison
*Ronald William Brust	Edward Francis Mosher, II
Barbara Bryant	Frank Burton Myska
Lorna Little Carter	John Francis Nichols, II
*Martin Bert Cohen	Yukiko Suzuki Nichols
Delores Felice Collins	*Samuel Joseph Noumoff
William George Cooper, Jr.	Marjorie Louise Olson
Edward Charles Cooperman	*David Dill Oswell
John Everett Culbert	Judith Ann Palmer
Sidney Ernest DeBoer	Franklin David Parmenter
Nicholas Emanuele DeNigris	Frank Edwin Pawlina
Peter Michael D'Errico	David Allen Peirce
Wendy Nyerdi Wang Djeu	Adrienne Elizabeth Petridis
Robert Walter Duffy	Philip Louis Philip
Paul Ward English	Joan Ruth Pinchak
Erna Marie Erikson	George Henry Proffitt
Elaine Elizabeth Foster	Ronald Harry Rogstad
Stephen Herbert Gens	Leonard Arthur Schoolman
William Michael Gibbons	Frederick Seligman
Henry Joseph Guerin	Dorothy Joan Sergeant
Herbert Hoover Haddad	*William Charles Sigalis
Edythe Marilyn Harvey	Alan Michael Snyder
Elmer Roger Haskell	Mary Ann Steffon
Carolyn Edith Haupt	Edith Bresnick Steinberg
Burton Paul Hoffner	Morton Steinberg
June Ingrid Johanson	Norman Steinberg
Carle Albert Johnson, Jr.	*Allan Martin Streichler
Robert Arthur Johnson	Edward Patrick Sullivan
Richard Norman Jolie	*Helen Theresa Sullivan
*George Charles Jones	Nobuhiko Takeuchi
Vivian Sylvia Kajander	Barbara Ann Tucker
Helen Kiakis	Takeshi Utsunomiya
George Herbert Kronberg	Joan Warfield
William Bruce Laakso	Robert Lewis Wright
Barbara Joan Schultz Lander	Seung Soo Yun
Anna Teresa Latino	

**As of June 3, 1956*

Candidates for the Degree of Bachelor of Arts with Honors

Departmental Honors

Martin Arons, *International Relations*
Robert Gerrol, *Government*
Richard Allen Hanson, *Geography*
David Goodwin Hayes, *International Relations*
Richard Skerry Johnson, *Geography*
Herman Abraham Makler, *English*
William Patrick Smelewicz, *Sociology*

Cum Laude

Inge Komers Broverman, *and with High Honors in Psychology*
George Brammer Dawson, *and with Honors in Geography*
Rosaline Shirley Feinstein, *and with Honors in Psychology*
Diana Garon
Virginia Marie Haas
Donna Marie Logue, *and with High Honors in Geography*
Edward Marshall Morin
Fred Leonard Resh
Eugene Mehlman Scheel, *and with High Honors in Geography*
Bernard David Shapiro, *and with Honors in Government*
Victor Hugo Strandberg, *and with High Honors in English*
Gerald Melvin Weisenberg, *and with Honors in English*
Donald Roland Young
Margaret Ann Ziarko

Magna Cum Laude

Joseph Ernest Napolitano
Patricia Rose Power
Theodore Reuben Smith

Summa Cum Laude

Sylvie June Eriksson, *and with High Honors in History*

Candidates for the Degree of Master of Arts in Education

Robert Vincent Carey
Charlotte Roslyn Cohen
George Alfred Coupe
Nicholas Remsen Cowenhoven
John William Daly
George Andrew Downes, Jr.
Elizabeth Mary Foley
John Henry Fulgoni
Wilfred Richard Granger
Nancy Ann Johnson
Demeter Theodore Karaku

Justin John Kelley
William James Mara
Arthur Leonard Mullin
James Daniel O'Leary
John Powel Shaw
Helen Leblanc Sondrol
Herbert Stephen Sperry
Anna Kontulis Stavros
Donald William Sullivan
Paul Joseph Vernon
John Frederick Warner, Jr.

Candidates for the Degree of Master of Arts

Biology

Benson Kane

Chemistry

Richard Lyman Gustafson

Benjamin Joseph Intorre

Henry Ernest Rosenberg

Economics and Sociology

John Donald Coupe

Chao Fan Hsu

Eisuke Nakayama

James Alexander Sherbaniuk

Homer Philbrick Wentzell

Geography

Roland John Fuchs

John Peter Johnson, Jr.

Edith Miriam Levo

Richard Arnold Lockhart

Salvatore John Natoli

Edward Renny

Fredric Arnold Ritter

Victor Wallace Sim

History, Government, and International Relations

Winthrop Donaldson Jordan

Thor Hilding Kuniholm

Norman Hall Pollock

Leroy Warren Rand

Psychology

Arlene Lee Aron

Donald Monroe Broverman

Frank Edward Clarkson

Joseph Henry McFarland

Herbert Joseph Nickel

Janet Switzer

William Vogel

Candidates for the Degree of Doctor of Philosophy

Chemistry

Amilcare Biancheria

Roger Gerard Lacoste

Daniel Walter Thomas

Economics and Sociology

John Joseph Breen, Jr.

Geography

Monir Saad Girgis

Mohammed Halim Khan

Telesforo Wisco Luna, Jr.

Richard Ernest Murphy

Robert Folsom Perry, Jr.

Anthony Sas

Grady Oscar Tucker, Jr.

History, Government, and International Relations

Raymond Joseph Marion

Godwin Anibeze Odenigwe

Psychology

Roger Maurice Albert Bibace

Howard Thomas Blane

Charles Hersch

Donald Max Krus

Harriett Amster Podell

Jerome Edward Podell

Conferring of Honorary Degrees

ROBERT ULICH

Presented by Vernon Jones

Doctor of Letters

CHARLES LYNCH PHILLIPS

Presented by Robert Stanley Illingworth

Doctor of Humane Letters

GEORGE NATHANIEL JEPSON

Presented by Robert Francis Campbell

Doctor of Laws

THE PRENTISS CHENEY HOYT PRIZE IN POETRY

First Prize: Diane Barbara St. Jean

Second Prize: Carle Albert Johnson, Jr.

THE LORING DODD PRIZE IN DRAMA

Sidney Ernest DeBoer

THE HOMER P. LITTLE AWARD IN GEOLOGY

William Elliot Topkin

THE SANFORD MEMORIAL SCHOLARSHIP

Melvyn Herbert Zarr

CLARK UNIVERSITY

Summer School—1957

Interession, June 10 to June 29
Summer Session, July 1 to August 16



CALENDAR

JUNE

- 10 Monday, *Intersession Registration* 9–12 Noon
First class meeting 2 P.M.
- 26 Wednesday, Registration for Evening Classes
- 29 Saturday, Examinations for Intersession Courses 9–12 Noon

JULY

- 1 Monday, *Summer Session Registration* for day classes 9–12 Noon
Evening Classes begin 6 P.M.
- 2 Tuesday, Day classes begin 8 A.M.
- 4 Thursday, A holiday
- 23 Tuesday, Examinations in double courses concluding after
first three weeks
- 24 Wednesday, Beginning of double courses of second three weeks

AUGUST

- 13 Tuesday, No Classes
- 14 Wednesday, Examination for classes meeting at 8 A.M.—9 to
12 Noon
for evening classes meeting at 6 P.M.—7 to 10 P.M.
- 15 Thursday, Examination for classes meeting at 9:15 A.M.—
9 to 12 Noon
- 16 Friday, Examinations for classes meeting at 10:30 A.M.—9 to
12 Noon
for classes meeting at 11:45 A.M.—2 to 5 P.M.
for evening classes meeting at 8 P.M.—7 to 10 P.M.

1957

JUNE							JULY							AUGUST						
SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31

Clark University
SUMMER SCHOOL

Intersession, June 10 to June 29

Summer Session, July 1 to August 16

1957

Worcester, Massachusetts

The BULLETIN is published four times a year, January, February, March, and December.

Entered as second-class matter December 29, 1920, at the Post Office at Worcester, Mass., under the Act of August 24, 1912. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized January 24, 1921.

A Unique Opportunity to Learn

The 1957 Clark University Summer School offers a unique opportunity for summer college study in Central Massachusetts. Intensive instruction in numerous fields will be offered in the intimate and pleasant atmosphere of a small university. In an effort to provide as broad an educational experience as possible, the University will make available a varied program of informal afternoon discussions, special lectures and conferences, and week-end excursions to famous New England cultural and recreational centers.

Throughout the program emphasis will be placed upon effective learning through a synthesis of superior teaching, individual attention, and a relaxed, pleasant atmosphere. Small classes will meet outdoors at various campus locations.

Members of the regular Clark faculty, assisted by distinguished visitors, will teach a variety of undergraduate and graduate courses in liberal arts, business and education. Both day and evening classes will be offered.

Clark is ideally located for summer study in Worcester, an outstanding cultural center in the heart of New England. The summer climate is pleasant, and the city is within easy reach of mountains, lakes, and superb New England scenery. Many important and interesting historical points are only a short distance away.

DETAILS OF INTEREST

A refreshment and social hour for all students and faculty will be held weekly in the shade of the campus trees afternoons at 3:15 P.M. This will be followed by an informal seminar open to all, at which a member of the faculty or visitor will discuss some topic of general interest and pertinent to our times. By attending these seminars the student has the opportunity of broadening his horizons and becoming more widely acquainted with the faculty and their special interests.

Clark University has excellent library facilities featuring an "open shelf" system with an opportunity for unlimited browsing. The number of modern books and professional periodicals available is large and varied. The map library is almost uniquely rich. The library will be open on Mondays and Wednesdays from 9 A.M. until 8 P.M.; on Tuesdays, Thursdays, and Fridays from 9 A.M. until 5 P.M.

Clark University again plans to be host to a group of foreign





students during two weeks of the Summer Session through special arrangement with the Experiment in International Living. They will reside in the dormitories, visit classes, and join our students in all activities to understand student life in an American University and to promote international good will.

Students are strongly urged to participate in the extracurricular activities such as the special conferences, the weekly seminars, and the many week-end tours which are offered at cost or student rates. A full day excursion to the famous Ted Shawn's Dance Festival at Jacob's Pillow and to the even better known Berkshire Music Festival will be an unusually rewarding experience for those even slightly interested in the fine arts. The trips to the colonial settlements at Plymouth or Deerfield, or to nearby Sturbridge Village, a reproduction of an eighteenth century New England community, prove ever interesting to the first or oft-time visitor with the exceptional display of fine buildings, their antique furnishings and the exhibition of ancient hand crafts. For the more athletic there are the excursions to the Cape's unique dunes and beaches, and to New Hampshire's famous geological prototype, Mt. Monadnock. The student should not fail to visit Worcester's fine Art Museum and the renowned collection of armor at the Higgins Museum. Small groups of students are always welcome to join the many class excursions to nearby points of historical, social, or educational interest.

ADMISSIONS

Students are eligible for admission to the Summer School if they are undergraduate or graduate students at Clark University or elsewhere. Freshmen beginning their college studies in the summer must present a statement of admission to a recognized college. Persons of maturity who are not candidates for academic degrees may also pursue their scholastic interests at the University. Clark Evening College students can be admitted to any scheduled classes, but are urged to plan their program with Mr. Robert Hyde, Director, Evening College.

Admission to the Summer School does not guarantee admission to the regular terms.

An application for admission is enclosed or may be obtained by writing to the Summer School and should be filled out and submitted at an early date to facilitate registration. All students who preregister must verify their registration on June 10 for the Inter-session and July 1 for the Summer Session. Tuition must be paid on the registration days.

DEGREES AND CREDITS

All courses offered are accepted at Clark for credit toward the degrees of Bachelor of Arts and Bachelor of Business Administration, or the Evening College degrees of Bachelor of Science in General Studies and Bachelor of Science in Business Administration unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the Chairman of the department concerned. Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the Staff other than those listed in the present Bulletin.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages, which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

A student may carry in a normal program one course in the Inter-session (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration. Course changes after the third day of classes must be approved by the Director.

A transcript of a student's Summer School record is available free of charge, but application for it should be made in the Summer School office.

TUITION AND FEES

A matriculation fee of \$5.00 is required of all students entering Clark University for the first time. The tuition for each three semester hour course is \$70.00. Persons who wish to audit a course without receiving credit register and pay tuition at the stated rate. Students carrying two courses during the Summer Session may audit a third course without additional cost. Tuition and fees must be paid at

the Bursar's Office immediately following registration. A fee for late registration of \$1.00 per day, to a maximum of \$5.00 must be paid by students who fail to complete registration within the official Registration Period.

Students who attend not more than three days of classes in either the Intersession or Summer Session and are forced to withdraw with just cause, may receive a refund of their tuition on applying in writing to the Director of the Summer School. Students of the Summer Session who are forced to leave before the beginning of the second week may expect a refund of two-thirds of their tuition, those who leave before the beginning of the third week may have one-third of their tuition refunded. Students leaving after the beginning of the third week of classes are not entitled to any refund.

Students leaving after the third day of classes will automatically receive a grade of failure unless they petition the College Board for special consideration.

LIVING FACILITIES AND COSTS

Dormitory facilities for both men and women are available, but reservations should be made promptly on or before June 1. Room rent is \$15.00 for the Intersession and \$35.00 for the Summer Session. A room and key deposit of \$10.00 is required in advance to hold a room. This deposit is not part-payment for the rent. The \$10.00 will be returned in full if the room is undamaged when the key is returned.

The facilities of the Student Union are available to all students throughout the week. Excellent meals and refreshments are served at reasonable cost.

VETERANS

Veterans attending the 1957 Summer School should present their supplemental Certificate of Eligibility at the Veterans' window in the Bursar's Office not later than Friday of the first full week of the term. The Director of the Summer School should be consulted when unusual or unexpected situations arise.

Veterans are reminded that Certificates of Eligibility held during the Spring Semester 1957 do not apply to the Summer School and that a new application must be completed for the course of summer study.

ELIGIBILITY FOR COURSES

Courses beginning with "1" are open to all undergraduates except freshmen. Courses preceded by an "F" are open to freshmen. Courses beginning with "2" are open to advanced undergraduates and graduate students. Teachers working toward degrees or credits in Education should consult with Professor Vernon Jones, Chairman of the Department of Education.

Intersession courses meet for two 70 minute periods at 9:00 A.M. and at 2:00 P.M., Monday through Friday. Summer Session courses during the day meet for one 70 minute period Monday through Friday. Double courses meet for two 70 minute periods five days a week. Evening classes meet for 110 minutes on Monday, Wednesday and Friday evenings. Exceptions to the above time schedule are listed under course descriptions.

ADMINISTRATIVE OFFICERS OF THE UNIVERSITY

HOWARD B. JEFFERSON, *President*
 ROGER C. VAN TASSEL, *Director of the Summer School*
 H. DONALDSON JORDAN, *Chairman of the College Board*
 HENRY C. BORGER, JR., *Dean of Men*
 M. HAZEL HUGHES, *Dean of Women*

SUMMER SCHOOL STAFF

(All are members of the Clark University Faculty unless otherwise indicated)

HELEN G. AGBAY, M.A., *Lecturer in Clark University Evening College*
 KARL O. E. ANDERSON, PH.D., *Associate Professor of English, Chairman of English Department*
 KARL J. R. ARNDT, PH.D., *Professor of German, Chairman of German Department*
 ROBERT W. BAKER, PH.D., *Assistant Professor of Psychology*
 RAYMOND E. BARBERA, *Doctor en Letras, Assistant Professor in Romance Languages*
 HERBERT J. BASS, PH.D., *Instructor in History*
 JAMES F. BEARD, JR., PH.D., *Assistant Professor of English*
 ROBERT N. BECK, PH.D., *Associate Professor of Philosophy*
 HENRY C. BORGER, JR., PH.D., *Associate Professor of Education*
 CHARLES T. BUMER, PH.D., *Professor of Mathematics, Chairman of Mathematics Department*
 GUY H. BURNHAM, M.A., *Instructor in Geography, Cartographer*
 ROBERT F. CAMPBELL, PH.D., *Associate Professor of American History*
 DEANE C. CARSON, PH.D., *Visiting Lecturer, Assistant Professor of Economics, Brown University*
 WILLIAM H. CARTER, JR., PH.D., *Associate Professor of English*
 CHARLES W. CHURCHILL, PH.D., *Visiting Lecturer, Associate Professor of Sociology, American University at Beirut*
 MORRIS H. COHEN, PH.D., *Associate Professor of Government*
 JAMES A. COOKE, M.ED., *Lecturer, Clark Evening College*
 ANDREW DIBNER, PH.D., *Assistant Professor of Psychology*
 JAMES S. EDWARDS, M.A., *Associate Professor of German*
 GEORGE E. HARGEST, M.B.A., *Associate Professor of Business Administration*
 CHARLOTTE B. JOHNSON, M.A., *Visiting Lecturer, Instructor, School of Worcester Art Museum*
 VERNON JONES, PH.D., *Professor of Educational Psychology, Chairman, Department of Education*
 BERNARD KAPLAN, PH.D., *Assistant Professor of Psychology*
 FREDERICK W. KILLIAN, LL.B., *Associate Professor of Sociology*
 DWIGHT E. LEE, PH.D., *Professor of Modern European History*
 DONALD H. LETENDRE, M.A., *Assistant Professor of English*
 ROBERT E. LINGNER, M.A., *Instructor in Geology*
 ROLF LOOSLI, M.A., *Assistant Professor of Physiology*
 JAMES A. MAXWELL, PH.D., *Professor of Economics, Chairman, Department of Economics*
 GEORGE H. MERRIAM, M.A., *Lecturer in History*
 THEODORE NICOL, PH.D., *Associate Professor of Romance Languages*
 RUDOLPH F. NUNNEMACHER, PH.D., *Professor of Biology*

JOSEPH A. NORDSTROM, M.S., *Assistant Professor of Business Administration*

NICHOLAS L. ONORATO, M.A., *Visiting Lecturer, Assistant Professor of Economics, Worcester Polytechnic Institute*

MARC RAEFF, PH.D., *Assistant Professor of History and Russian Language*

JOHN T. REYNOLDS, M.S., *Assistant Professor of Biology*

ROGER C. VAN TASSEL, PH.D., *Assistant Professor of Economics, Director, Summer School*

SAMUEL VAN VALKENBURG, PH.D., *Professor of Geography and Director, Graduate School of Geography*

ALVIN E. WINDER, PH.D., *Lecturer, Department of Psychology, Research Associate in Psychology*

COURSES OFFERED

BIOLOGY

S.17	General Ecology	Nunnemacher	Interession
S.130	General Bacteriology	Reynolds	8:00 A.M. and Labs.
S.247	Physiology of Reproduction	Loosli	Interession
S.370	Research in Biology	Staff	

BUSINESS ADMINISTRATION

S.10	Elements of Production	Nordstrom	6:00 P.M., M., W., F.
S.17	Public Speaking (two classes)	Beard, Letendre	8:00 P.M. or 9:15 A.M.
S.18	Corporation Finance	Onorato	11:45 A.M.
S.129	Federal Income Taxation	Hargest	8:00 A.M.
S.137	Managerial Accounting	Hargest	10:30 A.M.
S.185	Production Control	Nordstrom	8:00 P.M., M., W., F.

ECONOMICS

S.11a	Principles of Economics (part I)	Carson	Interession
S.11b	Principles of Economics (part II)	Van Tassel	9:15 A.M.
S.13	Money and Banking	Maxwell	Interession
S.28	Research in Economic Problems	Staff	

EDUCATION

S.201	Child Growth and Development—Ed. Psych.	Jones	8:00 A.M.
S.207	Use of Audio-Visual Materials in Teaching	Borger	9:15 A.M.
S.225	Demonstration in Methods and Materials in Teaching	Borger	10:30 A.M.
S.227	Workshop in Guidance Services in School Administration	Jones	11:45 A.M.

ENGLISH

S.11a	Composition and Literature	Anderson	Interession
S.11b	Composition and Literature	Beard	6:00 P.M., M., W., F.
S.12	Public Speaking (two classes)	Letendre, Beard	9:15 A.M. or 8:00 P.M.
S.111	Survey of American Literature (since 1865)	Letendre	11:45 A.M.
S.125	The Short Story	Carter	Interession

FINE ARTS

S.17	Art Appreciation	Johnson	Interession
S.171	Modern Art	Johnson	9:15 A.M.

GENERAL EDUCATION

S.144	Introduction to Western Civilization	Edwards	Travel Course
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GEOGRAPHY

S.191	Cartography (single or double course)	Burnham	1:30 P.M. and Workshop
S.201b	Problem Areas in the World	Van Valkenburg	8:00 A.M.
S.280	Geography of the Middle East	Van Valkenburg	10:30 A.M.
S.300	Research in Geography	Staff	

GEOLOGY

S.12a	Physical Geology	Lingner	10:30 A.M. and Labs.
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HISTORY AND GOVERNMENT

S.130a	Political History of the U.S.	Campbell	11:45 A.M.
S.211b	Twentieth Century Europe	Lee	Intersession
S.236	The American Revolution 1763-89	Merriam	8:00 A.M.
S.237	Economic History of the U.S. since 1815	Bass	8:00 P.M., M., W., F.
S.238	New Viewpoints in American History	Campbell	9:15 A.M.
S.251a	American Political Parties	Cohen	10:30 A.M.
S.283b	Modern Eastern Europe	Raeff	Intersession
S.300	Reading and Research in History and Government	Staff	

LANGUAGE (Double Courses)

S.12	Intermediate French	To be announced	9:15 A.M. and 2:00 P.M.
S.14	Readings in French Literature	Nicol	9:15 A.M. and 2:00 P.M.
S.11	Introductory German	Arndt	8:00 A.M. and 11:45 A.M.
S.11	Introductory Spanish	Barbera	9:15 A.M. and 2:00 P.M.
S.12	Intermediate Spanish	Agbay	9:15 A.M. and 2:00 P.M.

MATHEMATICS

S.10	Preparatory Mathematics	Cooke	8:00 P.M., M., W., F.
S.11a	Algebra and Trigonometry	Bumer	10:30 A.M.
S.15	Numerical Analysis	Bumer	8:00 A.M.

PHILOSOPHY

S.116	Readings in Existentialism	Beck	Intersession
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PSYCHOLOGY

S.11a	General Psychology	Kaplan	8:00 A.M.
S.190	Industrial Psychology	Dibner	6:00 P.M., M., W., F.
S.200b	Social Psychology	Winder	9:15 A.M.
S.204b	Personality Evaluation	Baker	Intersession
S.350	Research in Psychology	Staff	

SOCIOLOGY

S.11b	Analysis of Our Society	Killian	10:30 A.M.
S.13	Crime, Delinquency and Society	Killian	11:45 A.M.
S.16	Social Problems	Churchill	Intersession

COURSE OFFERINGS

Biology

Interession

F.—BIO.—S.17 GENERAL ECOLOGY

Rudolph F. Nunnemacher, *Professor of Biology*

An introductory study of the distribution of plants and animals, their interrelationships and adaptations to such a wide variety of environments as the seashore, sand dunes, woodlands, and ponds. Field trips to Mt. Monadnock, the virgin forest at Bradford, N. H., the North Shore, and the Barnstable dunes on Cape Cod will be taken on Saturdays. Previous courses in Biology are helpful but not required. This course should prove equally valuable to students now in college, to teachers of Natural Science, and to others who have a general interest in that field.

Travel and laboratory
fee: \$10.00

Mon. through Fri. at 9:00 and 2:00; short field trips
or laboratory, Tues. and Thurs., 2:00–5:00 P.M.

BIO.—S.247 COMPARATIVE PHYSIOLOGY OF SEXUALITY AND RE- PRODUCTION

Rolf Loosli, *Assistant Professor of Physiology*

As an introduction, a consideration of the sexual reproduction of micro-organisms is planned in order to present a general theory of sexuality. In this context, some cases of convertible sex in higher animals will be interesting. The physiological basis of fertilization will be the next topic, tracing its prerequisites and its effects on the egg cell. Eventually, a selection of different means of reproduction in higher forms is to be discussed.

Clark Hall 202

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

BIO.—S.130 GENERAL BACTERIOLOGY

John T. Reynolds, *Assistant Professor of Biology*

An introduction to the study of bacteriology.

Clark Hall 202

Mon. through Fri., 8:00–9:10 A.M.

Laboratory fee: \$10.00

Labs. Tues. and Thurs., 2:00–4:00 P.M.

BIO.—S.370 RESEARCH IN BIOLOGY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Business Administration

Summer Session

F.—B.A.—S.10 ELEMENTS OF PRODUCTION

Joseph A. Nordstrom, *Assistant Professor of Business Administration*

An introductory course which provides a survey of the production function in business, giving special emphasis to an exposition and theoretical evaluation of current practices in the fields of plant location, building and equipment selection, product and process development, maintenance, and methods of manufacture.

Clark Hall 217

Mon., Wed. and Fri., 6:00–7:50 P.M.

F.—B.A.—S.17 PUBLIC SPEAKINGJames F. Beard, Jr., *Assistant Professor of English*

For course description see section on English.

(Candidates for the B.B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. Eng.—S.12.)

Clark Hall 106

Mon., Wed. and Fri., 8:00–9:50 P.M.

BA.—S.18 CORPORATION FINANCENicholas L. Onorato, *Assistant Professor of Economics,
Worcester Polytechnic Institute*

A study of the financial structure of modern industry with emphasis on the nature of the business corporation, its financial practices, types of securities, capital structure, financial reorganization, and the problems of internal financial control.

Clark Hall 217

Mon. through Fri., 11:45 A.M.–12:55 P.M.

B.A.—S.129 FEDERAL INCOME TAXATIONGeorge E. Hargest, *Associate Professor of Business Administration*

A basic course in Federal Income Taxation dealing with the laws and regulations as they apply to individual persons. Consideration is given a series of practical problems covering concrete situations designed to illustrate the meaning of the law as it applies to the taxpayer. Practice is provided in the preparation of returns. (This course may not be counted toward the A.B. degree, but only toward a business degree.)

Clark Hall 217

Mon. through Fri., 8:00–9:10 A.M.

B.A.—S.137 MANAGERIAL ACCOUNTINGGeorge E. Hargest, *Associate Professor of Business Administration*

The course is designed to meet the needs of those students who wish to include a limited amount of accounting in their course of study because of its importance as a tool of management or research or because of its place in investment analysis. After a brief survey of the history of the development of financial statements, the course will deal with the needs of various groups, such as bankers, credit managers, stockholders, corporate treasurers, etc. for accounting information and their varying viewpoints toward statement analysis. Classification of balance-sheet items; construction, interpretation and uses of balance-sheet ratios; comparative analysis of balance-sheets; statement of sources and application of funds; income statement analysis; cost-volume-price relationships and break-even analysis.

Clark Hall 217

Mon. through Fri., 10:30–11:40 A.M.

B.A.—S.185 PRODUCTION CONTROLJoseph A. Nordstrom, *Assistant Professor of Business Administration*

A study of the function of production control as used by progressive industrial management, and of the interrelation of production control with other controls. Topics to be discussed include production forecasting, development and analysis, relating budgeting to production, routing of operations and processes, scheduling, control of materials, quality control and coordination. The case study method will be employed. (This course may not be counted toward the A.B. degree, but only toward a business degree.)

Clark Hall 217

Mon., Wed. and Fri., 8:00–9:50 P.M.

Economics

Interession

EC.—S.11a PRINCIPLES OF ECONOMICS (Part I)

Deane C. Carson, *Assistant Professor of Economics, Brown University*

The first half of an introduction to the fundamental economic principles, together with a study of the practical application of these principles to the problems of American life. The second half will be given during the Summer Session.

Clark Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

EC.—S.13 MONEY AND BANKING

James A. Maxwell, *Professor of Economics*

The principles of money and banking; characteristics of the American monetary and banking system; theoretical relations of money, prices, income.

Clark Hall 217

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

EC.—S.11b PRINCIPLES OF ECONOMICS (Part II)

Roger C. Van Tassel, *Assistant Professor of Economics*

The second half of the Principles of Economics course, begun in the Interession.

Clark Hall 215

Mon. through Fri., 9:15–10:25 A.M.

EC.—S.28 RESEARCH IN ECONOMIC PROBLEMS

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Education

Summer Session

ED.—S.201 EDUCATIONAL PSYCHOLOGY—CHILD GROWTH AND DEVELOPMENT

Vernon Jones, *Professor of Educational Psychology*

A study of the growth and development of the child in relation to his experience in school. Systematic study will be made of the organismic changes in the child from birth to and including adolescence, and consideration will be given to the importance of maturation, growth, and social learning in effecting these changes. Attention will be focused on those factors in personality and emotional development over which the school has control. The interplay between the forces in the growing organism and the impact of various aspects of development upon each other will be considered. Procedures include class discussion, observation of children, use of visual aids, and individual projects.

Clark Hall 304

Mon. through Fri., 8:00–9:10 A.M.

ED.—S.207 USE OF AUDIO-VISUAL MATERIALS IN TEACHING

Henry C. Borger, Jr., *Associate Professor of Education*

A survey of principles and practices in the use of visual and auditory materials and community resources in teaching. Student laboratory sessions will supplement the instructor's demonstrations of materials and equipment. Practical applications of theory will be emphasized.

Clark Hall 303

Mon. through Fri., 9:15–10:25 A.M.

ED.—S.225 A DEMONSTRATION IN METHODS AND MATERIALS IN TEACHING

Henry C. Borger, Jr., *Associate Professor of Education*

A series of carefully planned and evaluated experiences in the observation of children's activities utilizing modern methods and materials in an actual classroom situation. Attention will be given to several methods of approach particularly the unit. Observation of the dynamic classroom in action will enable the student to acquire first-hand knowledge of the nature and needs of the growing child on the junior high school level. Application will be made to elementary and high school teaching. Although essentially a demonstration experience, the course will include the theory behind the practice that is observed.

Clark Hall 209

Mon. through Fri., 10:30-11:40 A.M.

ED.—S.227 WORKSHOP IN GUIDANCE SERVICES IN SCHOOL ADMINISTRATION

Vernon Jones, *Professor of Educational Psychology*

Principles and practices in collecting and using psychological and other data in the guidance and program making of individuals and groups. Workshop experiences will be provided in working with actual cases in guidance and in the administrative counterparts of guidance.

Clark Hall 304

Mon. through Fri., 11:45 A.M.-12:55 P.M.

English

Intersession

F.—ENG.—S.11a ENGLISH COMPOSITION AND LITERATURE

Karl O. E. Anderson, *Associate Professor of English*

The purpose of English 11 is to develop clarity and accuracy in reading and writing. After a short review of the principles of rhetoric, the course will be devoted to the study of expository essays and short stories. Themes and individual conferences. This course, together with English 11b, is a requirement for the Clark A.B.

Clark Hall 301

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

ENG.—S.125 THE SHORT STORY

William H. Carter, Jr., *Associate Professor of English*

This course involves the intensive reading of a wide range of stories which exemplify a variety of fictional methods, affording the student some knowledge of the history of this literary type. The primary aim is to help the student develop an appreciation of the broadly human values implicit in the short story.

Clark Hall 212

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.—ENG.—S.11b ENGLISH COMPOSITION AND LITERATURE

James F. Beard, Jr., *Assistant Professor of English*

This second half of the year course aims to help the student develop sound critical principles in evaluating fiction and poetry.

Clark Hall 106

Mon., Wed. and Fri., 6:00-7:50 P.M.

F.—ENG.—S.12 PUBLIC SPEAKING

Donald H. Letendre, *Assistant Professor of English*

A course in the fundamentals of public speaking, emphasizing both the composition and delivery of the most common types of speeches, such as introductory, expository,

and impromptu speeches. Special attention will be given to problems of human relations, voice tests, vocabulary development, and the acquisition of self-confidence, poise, and effective communication techniques. Practice speeches, conferences, and voice recordings to enable the student to recognize and correct his speech deficiencies. (Candidates for the B.B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. Eng.—S.12.)

Clark Hall 304

Mon. through Fri., 9:15–10:25 A.M.

ENG.—S.111 SURVEY OF AMERICAN LITERATURE (SINCE 1865)

Donald H. Letendre, *Assistant Professor of English*

An introduction to representative American writers from 1865 to the present. The course focusses primarily on the rise of realism and naturalism in fiction (local colorists, Twain, Howells, Lewis, Hemingway, and Steinbeck) and on the development of modern poetry (Dickinson, Robinson, Frost, Sandburg, and Eliot). Intellectual currents and literary trends are emphasized as well as the close examination of a few selected works.

Clark Hall 301

Mon. through Fri., 11:45 A.M.–12:55 P.M.

Fine Arts

Interession

F.—F.A.—S.17 ART APPRECIATION

Miss Charlotte B. Johnson, *Instructor, School of Worcester Art Museum*

A survey of Western art considering only the major civilizations and artists who contributed to the development of painting, sculpture, architecture and certain minor arts. This course may not be counted for credit in addition to F.A. 11.

Clark Hall 106

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.A.—S.171 MODERN ART

Miss Charlotte B. Johnson, *Instructor, School of Worcester Art Museum*

The evolution of the modern movement as it began in the 19th century in France and spread into western Europe and the United States of America and has been developing up to the present. The major movements in painting, sculpture, and architecture will be studied through discussion and lecture with lantern slides and reading in selected books.

Clark Hall 102

Mon. through Fri., 9:15–10:25 A.M.

General Education

F.—S.144 INTRODUCTION TO WESTERN CIVILIZATION

James S. Edwards, *Associate Professor of German;*
Director of Dramatics

A lecture-study tour of Europe which will combine the customary formal instruction with exposure to places and scenes in which Western Man's experience actually took place. Included will be a survey of the West's institutional development and cultural life with emphasis on his expressive forms and activities in Art, Literature and Music.

The 46 day land tour will visit Spain, France, England, Belgium, Germany, Austria, and Italy and will span our cultural and social heritage from Greco-Roman times through the Renaissance to the present. Introductory lectures will be held on shipboard to the continent. Each student will take a three hour examination held on the last two days of the return voyage. Six semester hours credit, this will fulfill

the Fine Arts requirement. Because of the limited enrollment and demand an early application is necessary. Applications must be completed and the inclusive fee of \$1285 must be paid by April 15, 1957. Sailing date: June 15 from New York. Return to New York August 15. Further information may be obtained from the Summer School office.

Geography

Summer Session

F.—GEO.—S.191 CARTOGRAPHY

Guy H. Burnham, *Instructor in Geography, Cartography*

A discussion of various graphic methods and their application to geographic data. Since emphasis will be placed upon the mastery of cartographic tools and instruments, this course should prove particularly helpful to those planning to enter government service or to do illustrative work. This course may be taken for double credit by special arrangement with the instructor.

Geography Hall Mon. through Fri., 1:30 P.M. and afternoon workshop

GEO.—S.201b PROBLEM AREAS IN THE WORLD: A POLITICAL GEOGRAPHIC EVALUATION

Samuel Van Valkenburg, *Professor of Geography*

This course covers the problem areas of the world, their causes and possible solutions, seen from the American point of view. It discusses such problems as the Arabs in North West French Africa, the controversy Israel versus the Arab States, the Kashmir case, the tendency toward the forming of a bloc of neutral states, the chance for unity in Germany and many others. All these are of vital importance not only to the peoples directly involved but also to the United States which tries to preserve peace in the world. (No prerequisites.)

Geography Hall Mon. through Fri., 8:00–9:10 A.M.

GEO.—S.280 GEOGRAPHY OF THE MIDDLE EAST

Samuel Van Valkenburg, *Professor of Geography*

The Middle East is at present making front page news. The course will give what is back of that news; the land, the climate, the people and their economy as well as an evaluation of the individual nations.

Geography Hall Mon. through Fri., 10:30–11:40 A.M.

GEO.—S.300 RESEARCH IN GEOGRAPHY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Geology

Summer Session

F.—GEO.—S.12a PHYSICAL GEOLOGY

Robert E. Lingner, *Instructor in Geology*

A course dealing with the origin of the landscape, the structure of the earth, identification of rocks, and interpretation of topographic maps. Two laboratory periods or field trips weekly.

Geology Lab. Mon. through Fri., 10:30–11:40 A.M.; laboratory or field trip, Tues. and Thurs., 2:00 P.M.
Travel and laboratory fee: \$10.00

History and Government*Interession***HIST.—S.211b TWENTIETH CENTURY EUROPE**Dwight E. Lee, *Professor, Modern European History*

The development of the major European nations since about 1900 with particular attention to their international relations.

Clark Hall 218

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

HIST.—S.283b MODERN EASTERN EUROPEMarc Raeff, *Assistant Professor of History and Russian Language*

Traces the development and character in recent times of the social, political and cultural factors characteristic of the area lying between Germany and Russia.

Clark Hall 220

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

*Summer Session***HIST.—S.130a POLITICAL HISTORY OF THE UNITED STATES**Robert F. Campbell, *Associate Professor of American History*

A study of the historical development of the Presidency, Congress, the Supreme Court and the Party System since the adoption of the Constitution, together with an examination of the outstanding personalities and issues in American political life from Washington to Eisenhower. Lectures will be supplemented by individual reports and discussion.

Clark Hall 209

Mon. through Fri., 11:45 A.M.—12:55 P.M.

HIST.—S.236 THE AMERICAN REVOLUTION, 1763–1789George H. Merriam, *Lecturer, Clark Evening College*

The course is planned to cover in careful detail the growth of revolutionary opinion in the British colonies from the end of the Seven Years war to 1775, to describe the actual happenings of the Revolutionary War in some detail, with more attention given to the philosophical background of this period, and to show the reaction from revolution which came to fruition in the adoption of the Federal Constitution.

Clark Hall 209

Mon. through Fri., 8:00–9:10 A.M.

HIST.—S.237 ECONOMIC HISTORY OF THE UNITED STATES SINCE 1815Herbert J. Bass, *Instructor in History*

This course will deal with the economic forces and institutions which have transformed America from an agricultural country into the world's leading industrial power. These developments will be related to the political, social, and intellectual life of America. Major topics to be considered are the industrial, transportation, and agricultural revolutions, financial and banking institutions, the development of trusts, the labor movement, and the role and growth of governmental regulation of major economic institutions.

Clark Hall 212

Mon., Wed. and Fri., 8:00–9:50 P.M.

HIST.—S.238 NEW VIEWPOINTS IN AMERICAN HISTORYRobert F. Campbell, *Associate Professor of American History*

Particularly designed for secondary school teachers of history and the social sciences, this course will, through readings and discussion, concern itself with some of the recent literature in the field of American History, especially in those areas where new interpretations or points of view have been expressed. Among the topics discussed will be: The Puritans, the Confederation Period; The Age of Jackson; The

Causes of the Civil War; The Age of Enterprise; The Progressive Movement; American Foreign Policy since 1900; and Recent Biographical Literature.

Clark Hall 217

Mon. through Fri., 9:15-10:25 A.M.

GOV.—S.251a AMERICAN POLITICAL PARTIES

Morris H. Cohen, *Associate Professor of Government*

A study of the functioning of American party organizations, pressure groups, and the electorate in American politics. Emphasis is placed upon current problems and trends in the field.

Clark Hall 302

Mon. through Fri., 10:30-11:40 A.M.

GOV.—S.300 READING AND RESEARCH IN HISTORY AND GOVERNMENT HIST.—S.300 MENT

Reading or thesis courses for graduate students to be arranged with staff members.

LANGUAGES

French

Summer Session

*F.—FR.—S.12 INTERMEDIATE FRENCH

Theodore Nicol, *Associate Professor of Romance Languages*

Additional instructor to be announced

This course aims to develop all the fundamental skills—pronunciation, conversation, grammar, reading—necessary as a basis for any effective use of the language. The approach will be conversational insofar as practicable. Carefully graded readings will be chosen primarily for affording insights into the culture of France. Open to students who have had the elements of French in a first-year college course or the equivalent. Indivisible course.

Clark Hall 104

Mon. through Fri., 9:15-10:25 A.M. and 2:00-3:10 P.M.

*FR.—S.14 READINGS IN FRENCH LITERATURE

Theodore Nicol, *Associate Professor of Romance Languages*

Additional instructor to be announced

A third-year course, designed first to perfect the student's techniques of reading, and second to give an understanding of a number of French works of universal importance and appeal. Open to students who have had a second-year college French course or the equivalent.

Clark Hall 106

Mon. through Fri., 9:15-10:25 A.M. and 2:00-3:10 P.M.

German

*F.—GER.—S.11 INTRODUCTORY GERMAN

Karl J. Arndt, *Professor of German*

The regular material of the first year of college German is covered: pronunciation, basic vocabulary, elements of grammar, composition, and reading of suitable German prose. An intensive course for students interested in devoting full time and complete attention to the study of German during the summer session.

Clark Hall 304

Mon. through Fri., 8:00 and 11:45 A.M.

*Double Course, two classes daily, through summer session.

Spanish***F.—SP.—S.11 INTRODUCTORY SPANISH**Raymond E. Barbera, *Assistant Professor of Romance Languages*

For beginners. The elements of grammar and pronunciation; carefully graded reading; exercises in speaking and writing.

Clark Hall 212

Mon. through Fri., 9:15 A.M. and 2:00 P.M.

***F.—SP.—S.12 INTERMEDIATE SPANISH**Helen Agbay, *Lecturer in Clark University Evening College*

This course aims to develop all the fundamental skills—pronunciation, conversation, grammar, reading—necessary as a basis for any effective use of the language. The approach will be conversational insofar as practicable. Carefully graded readings will be chosen primarily to afford some insights into Hispanic culture, of both Spain and Spanish America. Open to students who have had the elements of Spanish in a first-year college course or the equivalent. Indivisible course.

Clark Hall 218

Mon. through Fri., 9:15 A.M. and 2:00 P.M.

Mathematics*Summer School***F.—MATH.—S.10 PREPARATORY MATHEMATICS**James A. Cooke, *Lecturer, Clark Evening College*

This course in algebra will be devoted mainly to the second year of high school algebra, with a brief review of the first year. It may be useful as—(1) a background for college business mathematics, (2) meeting high school credits in preparation for college, (3) for teachers planning to teach high school algebra, (4) a brush-up course for college board examinations. Non-credit.

Clark Hall 218

Mon., Wed. and Fri., 8:00–9:50 P.M.

F.—MATH.—S.11a ALGEBRA AND TRIGONOMETRYCharles T. Bumer, *Professor of Mathematics*

This course is half of a year course in Freshman Mathematics. Topics in college algebra and trigonometry are introduced. Careful attention is given to fundamental concepts and to the development of useful techniques.

Clark Hall 212

Mon. through Fri., 10:30–11:40 A.M.

MATH.—S.15 NUMERICAL ANALYSISCharles T. Bumer, *Professor of Mathematics*

This course will treat selected topics from the following: Polynomial interpolation, numerical differentiation and integration, numerical summation of series, numerical solution of ordinary differential equations, error analysis, least square polynomial approximation, approximation by trigonometric and exponential functions, numerical solution of equations and sets of equations.

Clark Hall 212

Mon. through Fri., 8:00–9:10 A.M.

*Double Course, two classes daily, through summer session.





Philosophy

Intersession

PHIL.—S.116 READINGS IN EXISTENTIALISM

Robert Beck, *Associate Professor of Philosophy*

Selected readings of major figures in existentialist thought from Dostoevski to Sartre. (No prerequisites.)

Clark Hall 303

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Psychology

Intersession

PSY.—S.204b PERSONALITY EVALUATION

Robert W. Baker, *Assistant Professor of Psychology*

The purpose of this course is to provide an understanding of the principles, problems, and procedures of personality evaluation. It will include consideration of the nature of personality and its measurement, intelligence and its defects, and diagnostic testing designed to explore personality dynamics.

Clark Hall 304

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

PSY.—S.11a GENERAL PSYCHOLOGY

Bernard Kaplan, *Assistant Professor of Psychology*

An introduction to the principles of human behavior.

Clark Hall 301

Mon. through Fri., 8:00–9:10 A.M.

PSY.—S.190 INDUSTRIAL PSYCHOLOGY

Andrew Dibner, *Assistant Professor of Psychology*

A course dealing with the psychological factors underlying the interaction of individuals in their everyday working activities. Motivations, attitudes and values, as they affect human relations in industry will be discussed. Problems of industrial morale and problems of supervisory relationships will be considered, as will be the use of psychological tests and other techniques in job evaluation, personnel selection and placement.

Clark Hall 301

Mon., Wed. and Fri., 6:00–7:50 P.M.

PSY.—S.200b SOCIAL PSYCHOLOGY

Alvin E. Winder, *Lecturer, Department of Psychology,
Research Associate in Psychology*

A study of the ways in which individuals are moulded to become members of different groups. The course details how the infant and child acquire the attitudes, interests, beliefs, values and motives of such groups as the family, church, nation, etc. It also deals with the psychological processes underlying such important social phenomena as group conflict, the emergence of leadership, the transmission of rumor, the effectiveness of propaganda, panic and hysteria of groups, group violence, war. Prerequisite: an introductory course in psychology, or permission of the instructor.

Clark Hall 301

Mon. through Fri., 9:15–10:25 A.M.

PSY.—S.350 RESEARCH IN PSYCHOLOGY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Sociology

Interession

SOC.—S.16 SOCIAL PROBLEMS

Charles W. Churchill, *Visiting Lecturer, Associate Professor of Sociology,
American University at Beirut*

This course will investigate problems of American life with comparative material from other cultures. Problem situations will be stressed with material from original sources. Subjects covered will include economic and political problems, as well as crime and delinquency, family, health, population, and minority groups and problems of urbanization.

Clark Hall 209

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

SOC.—S.11b ANALYSIS OF OUR SOCIETY

Frederick W. Killian, *Associate Professor of Sociology*

This is an introductory course in understanding the society in which we live. How this system of customs, conventions, relationships has begun, grown and developed. It is a study of the framework of order and of institutions in which we find our needs and satisfactions and in which we relate to other people through status, playing roles, moving towards goals and interests. It is a study of the relationships between these goals, interests, values and conventions. The emphasis will be on the selected writings of the men who have made the study of sociology. We shall discuss the present situation of man and his possible destiny and the ways he can control that destiny. Also the human use of human beings.

Clark Hall 220

Mon. through Fri., 10:30–11:40 A.M.

SOC.—S.13 CRIME, DELINQUENCY AND SOCIETY

Frederick W. Killian, *Associate Professor of Sociology*

Study of the explanations for crime and delinquency; history of punishment; other methods of control. Survey of the English and American criminal law and administration of criminal justice; development of penal and correctional methods including probation, parole, release procedures; the juvenile court. Proposals for youth courts and youth correction authorities. Emphasis on crime as a system of behavior. Proposals for dealing with crime and delinquency.

Clark Hall 220

Mon. through Fri., 11:45 A.M.–12:55 P.M.

JUNE 10 — INTERSESSION — JUNE 29

Classes Meet Daily, Monday through Friday—9:00 to 10:10 A.M. and 2:00 to 3:10 P.M.—3 Credits

Bio. S.17	General Ecology	Eng. S.11a	English Comp. and Lit.	Hist. S.283b	Modern Eastern Europe
Bio. S.247	Physiology of Reproduction	Eng. S.125	The Short Story	Phil. S.116	Readings in Existentialism
Ec. S.11a	Principles of Economics	FA. S.17	Art Appreciation	Psy. S.204b	Personality Evaluation
Ec. S.13	Money and Banking	Hist. S.211b	Twentieth Century Europe	Soc. S.16	Social Problems

JULY 1 — SUMMER SESSION — AUGUST 16

Morning Classes Meet Daily Monday through Friday—3 Credits

8:00 to 9:10	Bio. S.130 General Bacteriology	Hist. S.236	Am. Revolution 1763-89
	BA. S.129 Federal Income Taxation	Math. S.15	Numerical Analysis
	Ed. S.201 Child Growth and Devel.	Psy. S.11a	General Psychology
	Geo. S.201b Prob. Areas of the World		

9:15 to 10:25	Ec. S.11b Principles of Economics	FA. S.171	Modern Art
	Ed. S.207 Use of Audio-Visual Aids	Hist. S.238	New Viewpoints in Am. Hist.
	Eng. S.12 Public Speaking	Psy. S.200b	Social Psychology
10:30 to 11:40	BA. S.137 Managerial Accounting	Gov. S.251a	American Political Parties
	Ed. S.225 Demonstr.-School Teach.	Math. S.11a	Algebra and Trigonometry
	Geo. S.280 Geog. of the Middle East	Soc. S.11b	Analysis of Our Society
	Geo. S.12a Physical Geology		

11:45 to 12:55	BA. S.18 Corporation Finance	Hist. S.130a	Political Hist. of U.S.
	Ed. S.227 Workshop in Guid. Serv.	Soc. S.13	Crime, Delinquency & Soc.
	Eng. S.111 Amer. Lit. (since 1865)		

1:30 P.M.	Geo. S.191 Cartography		
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Evening Classes Meet Monday, Wednesday and Friday—3 Credits

6:00 to 7:50	BA. S.10 Elements of Production	Psy. S.190	Industrial Psychology
	Eng. S.11b English Comp. and Lit.		

8:00 to 9:50	BA. S.17 Public Speaking	Hist. S.237	Economic Hist. of the U.S.
	BA. S.185 Production Control	Math. S.10	Preparatory Mathematics

DOUBLE TIME COURSES

Two Class Meetings Monday through Friday

Year Courses—6 Weeks—July 1—August 16

6 Credits

Fr. S.12	Intermediate French	9:15 & 2:00
Fr. S.14	Readings in French Lit.	9:15 & 2:00
Ger. S.11	Beginning German	8:00 & 11:45
Sp. S.11	Beginning Spanish	9:15 & 2:00
Sp. S.12	Intermed. Spanish	9:15 & 2:00

NOTE: Travel Course to Europe GE. S.144, Introduction to Western Civilization—Leaves New York June 15



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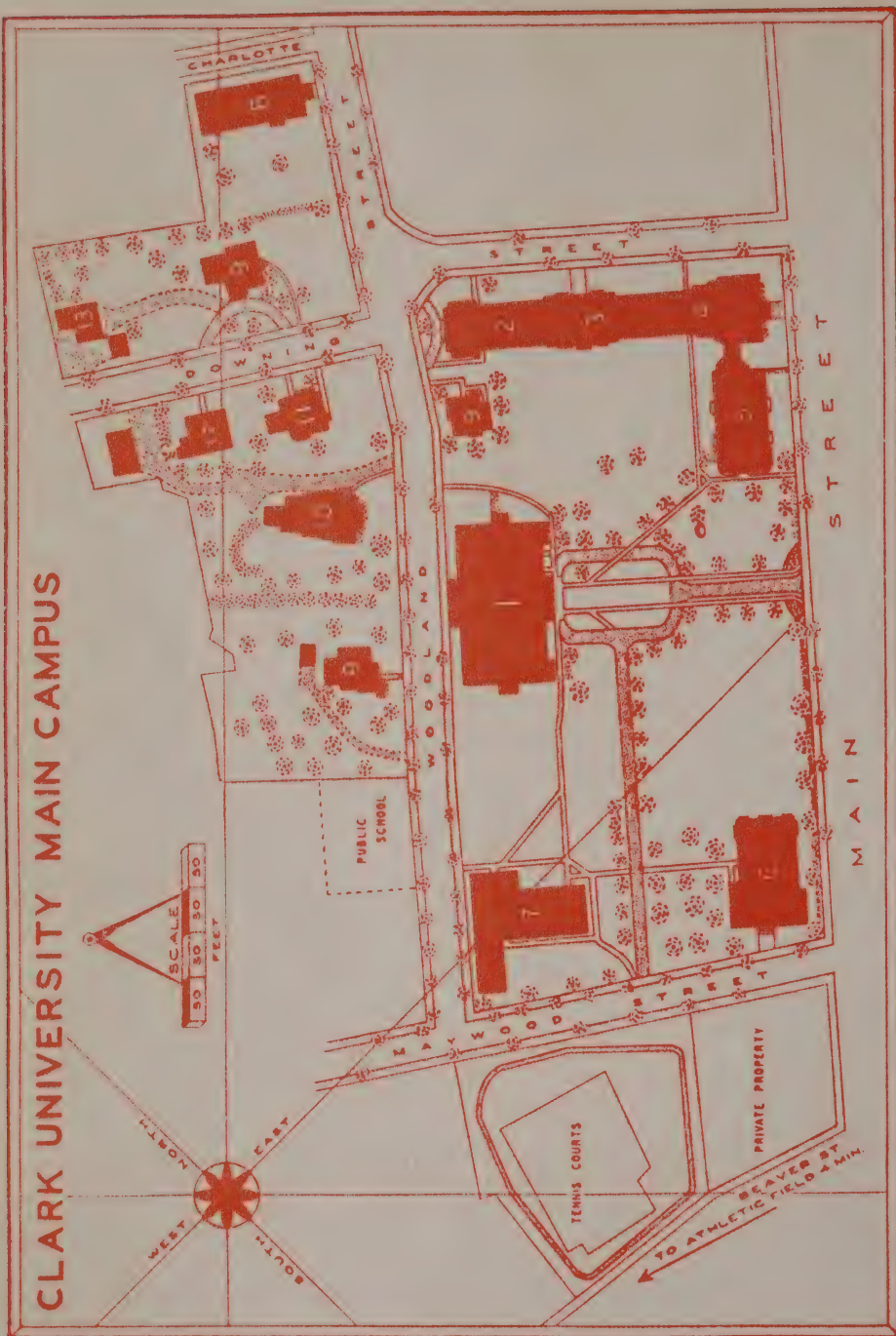
General Catalog

for Academic Year 1957-1958

Number 228

WORCESTER, MASSACHUSETTS

CLARK UNIVERSITY MAIN CAMPUS



1. Jonas Clark Hall
2. Atwood Hall
3. Library Tower
4. Library

5. Geography School
6. Alumni Gymnasium
7. Chemistry-Physics
8. Estabrook Hall
9. Women's Dormitories
10. President's Home

11. Dean's Home
12. Faculty House
13. Student Union

Clark University Bulletin

Number 228

August, 1957

General Catalog

A record for the current academic year 1956-57. Such announcements for the year 1957-58 as can be made at the time of publication are included. The university reserves, for itself and its departments, the right to withdraw or change the announcements made in its catalog.



The Bulletin is published in January, February, August, September and October. Entered as second-class matter December 29, 1920, at the Post Office at Worcester, Mass., under the Act of August 24, 1912. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized January 24, 1921.

NOTICE

The Tuition and other charges as shown on pages 19 and 20 of the catalogue have been increased for the school year 1958 - 1959 as follows:

Tuition -- Full Program (4 or 5 courses)	\$425 per semester
Per course	85 per semester
Board at University Dining Hall	220 per semester
Room Rent (men)	\$110 to 140 per semester
Room Rent (women)	125 to 170 per semester

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1957

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The Academic Calendar

The academic year begins on the Monday before the fourth Thursday in September and ends on Saturday before the thirty-eighth Monday. It includes two approximately equal semesters and three vacation periods: two weeks including Christmas and New Year's Days; one week at the close of the mid-year examination period, and one week near the first of April.

The first semester ends on the Saturday before the twentieth Monday. The second semester begins on the twentieth Monday of the academic year.

First Semester — 1957 - 58

1957

September 23	Monday	— Registration day. Beginning of academic year 1957-58.
November 1	Friday	— Last day for receiving applications for admission to candidacy for the degree of Doctor of Philosophy in June 1958.
November 11	Monday	— Veterans' Day. Not a holiday.
November 18	Monday	— Mid-semester reports due at 9 a.m.
November 27	Wednesday	— Beginning of Thanksgiving recess at close of classes.
December 2	Monday	— End of Thanksgiving recess at 8 a.m.
December 20	Friday	— Beginning of Christmas recess at close of classes.

1958

January 6	Monday	— End of Christmas recess at 8 a.m.
January 11	Saturday	— Registration for second semester.
January 16	Thursday	— Classes omitted.
January 17	Friday	— Beginning of semester examination period.
January 28	Tuesday	— Beginning of mid-year recess.

Second Semester — 1957 - 58

February 4	Tuesday	— End of mid-year recess at 8 a.m. Beginning of second semester.
February 7	Friday	— Last day for receiving applications for admission to candidacy for the degrees of Master of Arts and Master of Arts in Education in June 1958.
March 21	Friday	— Beginning of spring recess at close of classes.
March 24	Monday	— Mid-semester reports due at 9 a.m.
March 31	Monday	— End of spring recess at 8 a.m.
May 12	Monday	— Dissertations for degree of Doctor of Philosophy due at Registrar's office at 9 a.m.
May 19	Monday	— Theses for degrees of Master of Arts and Master of Arts in Education due at Registrar's office at 9 a.m.
May 21	Wednesday	— Classes omitted.
May 22	Thursday	— Beginning of semester examination period.
May 30	Friday	— Memorial Day. A holiday.
June 8	Sunday	— Commencement.

A Brief History of the University

Jonas Gilman Clark was a craftsman and an entrepreneur in the hardy New England tradition. He founded Clark University by endowing it with a part of the modest fortune he made as a furniture manufacturer in California during the Gold Rush era.

He returned to his native Worcester and with the assistance of his wife, Susan, and responsible citizens of the community he planned the university. In 1887 a charter was granted in the General Court of the Commonwealth of Massachusetts. Two years later the first buildings had been erected, the faculty organized and by October, 1889, students enrolled.

In establishing the university, Mr. Clark and his colleagues noted that the United States had many schools providing arts education to undergraduates, but only Johns Hopkins University at that time made available advanced studies which placed particular emphasis upon original research and specialized training.

Clark University thus was founded as a graduate school and from 1889 to 1902 it performed a unique function in higher education in America by devoting its attention to an advanced level of education. Today, the university's several graduate schools maintain these original precepts.

Granville Stanley Hall, regarded as the founder of the science of child psychology in America, was the institution's first president. He came to Clark from Johns Hopkins University to organize a scholarly faculty which earned an enviable reputation for the university and decisively created its character.

The first undergraduate college of Clark was established in the fall of 1902 in accord with the provisions of Mr. Clark's will. He believed that earnest young men, often with limited financial resources, could obtain a four-year college education in three years through intensive attention to study.

Clark College for young men was to provide "preparation for citizenship and their work in life". Admission requirements were flexible, but a high standard of scholastic performance was enforced. With serious purpose and hard work an undergraduate student could earn a bachelor of arts degree in only three years.

The ideas of Mr. Clark and the trustees were effectively developed

in the educational program which was established during the term of office of Carroll Davidson Wright, who had resigned as first United States Commissioner of Labor to serve as the first president of the college. After the death of President Wright in 1909, Edmund Clark Sanford, professor of psychology in the graduate school was chosen to be president of the college. In 1920, Sanford retired as president of the college, but remained as a professor while Hall retired as president of the graduate school.

Wallace Walter Atwood, professor of physiography at Harvard University, became president of both the graduate and undergraduate departments of the university. The election of President Atwood marked the addition of geography at both graduate and undergraduate levels to the instructional obligations of the university.

As the undergraduate college continued to grow there were significant changes after 1920. The period of residence for the degree of bachelor of arts was increased from three to four years to conform with the customary American collegiate system. The Division of Business Administration was established in 1941 with a program which now leads to the degree of Bachelor of Science in Business Administration.

Clark remained exclusively a university for men until World War II. The Women's College of Clark University was established by the trustees in 1941 and since 1942 women have been admitted and are eligible for degrees on the same basis as men.

In 1946 President Atwood, upon his retirement, was succeeded by Howard Bonar Jefferson who, at the time of his selection, was professor of philosophy and director of the school of philosophy and religion at Colgate University.

He at once began to strengthen the liberal arts curriculum of the university. An important result of this effort was the establishment at Clark in 1953 of a chapter of Phi Beta Kappa, Lambda of Massachusetts.

Facilities for instruction and research in the physical sciences at Clark will be expanded this year. Sponsored research for government and private agencies has grown within the past four years until today there are more than 25 projects underway in the fields of chemistry, physics, biology and psychology.

In keeping with the renewed emphasis on mathematics in scien-

tific research, the university has added mathematics to the graduate school program, offering a master's degree in mathematics starting with the academic year 1956-57.

Summer sessions at Clark have been maintained for many years. In addition a three-week program of accelerated studies, known as the Intersession, has been added recently to the academic program to provide a variety of courses of special or contemporary interest.

In September, 1953, the Evening College of Clark University was organized to provide a broad selection of credit courses for adults, most of whom have daytime occupations. The evening college grants the bachelor of science degree in general studies and in business administration. Also available is a varied program of non-credit courses, seminars and special lectures of a community service nature.

Worcester and the University

When plans for the new university were taking shape in Mr. Clark's mind, he enlisted the aid of a group of far-sighted and influential Worcester citizens from whom, later, the majority of his original board of trustees was chosen. In this was set a pattern for coöperation between the university and the community which has persisted throughout the history of the institution.

The intellectual life of the city has been enriched by the contributions of the faculty and of distinguished guests whom the university has brought to Worcester. Members of the staff have served local institutions both public and private in many ways.

The College has opened the door to higher education for hundreds to whom the opportunity would have been denied if they had been forced to seek it elsewhere, while the graduate school has aided the more gifted to proceed to the highest levels of intellectual endeavor. Particularly noteworthy has been the service to teachers in the public school system.

On the other hand, the University has benefited by the support, both financial and intangible, which it has received from the citizens of Worcester. The interchange of services and ideas with the staffs of other Worcester institutions and the opportunity to use their libraries on a reciprocal basis have been invaluable.

There is particularly close coöperation between the Department of Fine Arts and the Worcester Art Museum, between the Department of History and International Relations and the American Antiquarian Society, and between the Department of Psychology and the Worcester State Hospital. The Worcester Public Library and the Clark University Library coöperate by avoiding duplication in the coverage of certain subjects and by a corresponding widening of the coverage in the fields assigned to each.

The University is conscious that it is a part of the community and that, as such, it has both obligations and benefits. Its steadfast purposes is to strengthen the pattern of mutual interdependence and coöperation.

Buildings and Grounds

THE UNIVERSITY CAMPUS is situated on Main Street about a mile and a quarter from the business center of Worcester. The administrative and educational activities of the University are centered here. On adjacent property facing the campus on Woodland Street, are dormitories, the dining hall, and residences of the President and of the Dean of the College. A small athletic field, opposite the campus on Maywood Street, provides tennis courts and a running track. A larger field, at the corner of Beaver Street and Park Avenue, is used for baseball, soccer, and other sports. The Hadwen Arboretum, the gift of Obadiah B. Hadwen, is a tract of about twenty acres at the intersection of Lovell and May Streets.

THE MAIN BUILDING (Jonas G. Clark Hall), completed in 1889, is a four-story, granite and brick structure containing about ninety rooms. It houses the general academic offices of the University and the offices and classrooms of many of the departments of instruction.

The University Bookstore and the Men's and Women's Lounges are located on the second floor.

THE SCIENCE BUILDING, also completed in 1889, houses the Departments of Physics and Chemistry.

THE LIBRARY BUILDING, completed in 1903, marked a departure from the style of the older buildings. Its design, which has been followed in all of the later University buildings, is a modern adaptation of the Gothic, using brick as the construction material.

The original building, at the corner of Main and Downing Streets, was enlarged in 1910 by the addition of a wing extending along Main Street. Part of this wing is used for library purposes and it houses the Graduate School of Geography, the President's office and the offices of University Development and Public Relations. A second addition to provide for the growing book collections was added to the library in 1939. This is in the form of a tower which connects the Library Building with Atwood Hall.

ATWOOD HALL has its entrance on Woodland Street and extends along Downing Street to join the library tower. It provides an auditorium with a seating capacity of 800, which is used for weekly college assemblies and other university functions.

THE ALUMNI GYMNASIUM, completed in 1938, is at the corner of Main and Maywood Streets. It provides a playing floor of ample size with seats for 800 spectators. The Gymnasium also contains the

offices of the Alumni Secretary and a comfortable lounge which provides a convenient and attractive meeting place for University organizations.

ESTABROOK HALL, at the corner of Woodland and Charlotte Streets, provides dormitory accommodations for men and contains the University Dining Hall.

WOMEN'S DORMITORIES. There are at present four women's dormitories, Fanning, Blakeslee, Woodland, and Sanford Houses, all located on or adjacent to the campus.

THE STUDENT UNION is a former residence which has been converted into an attractive restaurant and lounge for students and guests. Light meals and snacks are served and there is a complete soda fountain service. The main room also serves as a lounge and dance floor. There are recorded music and television facilities. It is located on the Downing Street hill west of Woodland Street.

Organization

THE GRADUATE SCHOOL OF GEOGRAPHY offering instruction leading to graduate degrees in Geography.

THE GRADUATE SCHOOL offering instruction leading to the degrees of Master of Arts and Doctor of Philosophy.

THE COLLEGE FOR MEN (Clark College) offering a general college program leading to the degree of Bachelor of Arts and a vocational program leading to the degree of Bachelor of Science in Business Administration.

THE COLLEGE FOR WOMEN offering a general college program leading to the degree of Bachelor of Arts and a vocational program leading to the degree of Bachelor of Science in Business Administration.

THE UNDERGRADUATE DIVISION OF BUSINESS ADMINISTRATION which supervises the program in Business Administration in the undergraduate colleges.

THE EVENING COLLEGE offering programs leading to the degrees of Bachelor of Science in General Studies and Bachelor of Science in Business Administration.

THE LIBRARY, with an endowment separate from the endowment of the teaching branches of the University.

THE CLARK UNIVERSITY PRESS, associated with the University for the publication of scientific books and journals.

Guidance and Placement Bureau

JAMES M. COFFEE, Ph.D., *Director*

For the purpose of providing guidance and placement service to seniors, the University maintains and staffs a Bureau on the first floor of Jonas Clark Hall.

The guidance service provides individual counseling on problems concerned with planning a vocation, and on problems of adjustment to college life. This service supplements the advisory services of the individual teachers and deans of the University.

The placement service assists the student in job exploration. The service informs the student of available positions and arranges interviews with representatives of organizations in business, government, and education. Students are urged to establish a permanent personal reference file. The Bureau provides the forms for those papers which are kept on file and are available for the students' use at any time before or after graduation.

Part-time employment opportunities are also listed with the Bureau for students who wish to work in order to help meet college expenses.

The University Dining Hall

(ESTABROOK HALL)

The University Dining Hall is operated for the convenience of all students and the staff of the University. Service is cafeteria style.

Undergraduates who do not live at home are required to eat at the Dining Hall. Other members of the University are welcomed on a permanent or temporary basis or for single meals.

The Library

TILTON M. BARRON, *Librarian*

MARION HENDERSON, *Reference Librarian*

ELIZABETH HASSINGER, *Cataloger*

GUY BURNHAM, *Map Librarian*

Clark University Library contains over 215,000 volumes and a collection of some 50,000 maps and charts housed in a well-equipped building providing ample, well-lighted work areas for students and researchers.

The various collections that make up the Library reflect the history and academic growth of the University. The early Library was primarily a scholar's collection, serving the needs of the first faculty.

Jonas G. Clark, founder of the University, gave his private library of books and paintings to the Library and also provided a fund for its maintenance and enlargement. A room has been set aside for the display of this collection.

With the founding of Clark College in 1902 an undergraduate library was established. Both libraries are now combined.

The richest collections are in the fields in which graduate work is offered—geography, psychology, biology, chemistry, physics, mathematics, economics, history and international relations. Characteristically undergraduate in content are the collections dealing with music, fine arts, language, literature, religion and philosophy.

President G. Stanley Hall directed the assembling of words on psychology and also bequeathed his personal library to the University. These volumes form one of the best in the nation for material pertaining to the period of his activity, especially in child psychology. It is particularly rich in early prints of foreign journals.

With the establishment of the School of Geography at Clark under President Wallace W. Atwood, a noteworthy collection of books, maps and charts was assembled. In 1928 this collection was further enlarged by the bequest of the fine private geographic library of Colonel William Libbey of Princeton, N. J. A full-time cartographer is a member of the Library staff.

The "open stack" system is used in the Library to permit the

widest freedom for individual research and browsing. Only certain rare books and maps and frequently used reference material are on reserve.

A music library of recordings contains a collection of most classical and standard musical works and there is a listening room equipped with a phonograph.

A Language Center is a special feature of the Library. The comfortably furnished room serves as a practice area for those who desire to increase their proficiency in speaking and reading a foreign language.

There is a tape recorder for the recording and analysis of speaking ability. A collection of foreign newspapers and periodicals serves to increase reading skill and to acquaint the student with the contemporary culture of the foreign lands. The University's many foreign students are frequent visitors to the center.

Clark University Library coordinates its acquisition of new material and exchanges material with other libraries in the area.

Admission Information

The following information applies in general to the admission of students to the University. Inquiries concerning admission should be addressed to the following officers at CLARK UNIVERSITY, WORCESTER, MASSACHUSETTS:

Undergraduate colleges: *The Director of Admissions.*

Graduate schools: *The Secretary of the Graduate Board.*

The summer school: *The Director of Summer School.*

The evening college: *The Director of the Evening College.*

The University's telephone number is PLessant 6-1525.

CLASSIFICATION OF STUDENTS

Four classes of students are accepted in the University:

1. UNDERGRADUATES, candidates for the degrees of Bachelor of Arts and Bachelor of Science in Business Administration in the Men's College or the Women's College.

2. GRADUATE STUDENTS, candidates for the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy.

See the announcements of the graduate schools.

3. SPECIAL STUDENTS, persons not prospective candidates for a degree, who wish to take advantage of the opportunities for study provided by the University and who give satisfactory evidence of adequate preparation for the work which they wish to undertake.

Special students are under the supervision of the College Board.

4. Students in the Summer School and in the Evening College who may or may not be candidates for a degree.

AUDITORS may be admitted at the discretion of the administrative officers of the University. They pay the regular tuition charges but are not enrolled as students in the University and do not pay the matriculation fee.

The University reserves the right to require the withdrawal at any time of any student or auditor whose record in either conduct or scholarship fails to meet the expectations implied by his admission.

Tuition and General Charges

Tuitions fees and general charges which apply generally throughout the University are listed below. Certain special fees also are listed under the School of Geography announcement. Tuition and general charges for the Evening College and Summer School are not listed below.

All tuition, general charges, dormitory charges, laboratory fees and miscellaneous fees are due and payable on or before the first day of each semester. A penalty fee is charged for late registration and for late payment of tuition.

Application Fee. This fee must accompany the application for admission to the undergraduate colleges of the University. The fee is not returnable.

Tuition. Tuition is established on the basis of a student's participation in a normal academic program of four or five courses per year, September to June. Students who enroll for less than the normal program pay tuition on a course basis of approximately one-fifth the normal fee.

Activity Fee. This fee is paid by all full-time undergraduate students to cover the costs of certain extra-curricular activities and services. It covers admission to varsity athletic events, subscription to the student newspaper and certain other approved student programs.

Health Service and Infirmary Fee—The cost of these services are included in the general tuition and are no longer paid separately.

Laboratory and Deposit Fees—These special fees are due and payable on or before the first day of each semester.

Tuition:

Full program (4 or 5 courses)	\$350.00 per semester
Per course	70.00 per semester

General Charges: (Undergraduate Colleges)

Application fee	\$ 10.00
Matriculation fee	5.00
Board at University Dining Hall	190.00 per semester
Activity fee	7.50 per semester
Induction fee (paid by freshmen and transfer students)	25.00
Diploma fee (paid senior year)	5.00

Dormitory Charges:

Deposit fee	\$ 25.00
Key deposit (men only)	1.00
Room rent (for men)	\$ 90.00 to \$120.00 per semester
Room rent (for women)	\$105.00 to \$150.00 per semester

Laboratory Fees:

For Physics, Biology, Geology, Psychology, and Chemistry 11	\$10.00 per semester
All Chemistry except Chemistry 11	15.00 per semester
For supplies and breakage:	
Chemistry courses except Organic Chemistry	10.00 per year
Organic Chemistry only	20.00 per year

Miscellaneous Fees:

- For late registration: \$1.00 per day to maximum of \$5.00
 For late payment of tuition: \$5.00
 Optional insurance fee: \$12.00

Graduate School Fees:

Matriculation Fee	\$ 5.00
Diploma Fee (Master's Degree)	5.00
Publications Fee (Master's Degree)	10.00
Diploma Fee (Doctor's Degree)	25.00
Publications Fee (Doctor's Degree)	30.00

The Undergraduate Colleges

The Colleges

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The Men's College

The Women's College

The Division of Business Administration

The Undergraduate Colleges

The Men's College, established in 1902, and the Women's College, established in 1942, constitute the undergraduate colleges in Clark University. Financially the two colleges are independent, educationally they operate as a unit.

Requirements for admission and for a degree are identical in the two colleges. The colleges offer educational programs in the field of liberal arts and in the professional field of business administration.

The liberal arts program emphasizes breadth of training through requirements in each of the principal areas of human culture combined with the intellectual discipline resulting from a moderate degree of concentration in some selected field of special interest. The program, including the offerings made in cooperation with the Worcester Art Museum, possesses a large degree of flexibility permitting adaptation to a wide variety of individual interests. This program leads to the degree of Bachelor of Arts. A description of the program leading to the degree of Bachelor of Science in Business Administration will be found under the heading "The Division of Business Administration."

A program leading to the degree of Bachelor of Arts in which the essentials of a liberal education are combined with sound professional foundations in art is offered in cooperation with the Worcester Art Museum. Details of this program are given in the announcement of the Department of Fine Arts.

Information which is of interest to all students in the colleges is given in the succeeding pages, followed by separate announcements of the Men's College, the Women's College and the Division of Business Administration.

Admission

An application for admission is bound inside the back cover of the catalog. Applications should be carefully prepared and must be accompanied by the applicant's scholastic record and the non-returnable application fee. There are additional instructions on the application form.

Inquiries concerning admission to the undergraduate colleges should be addressed to:

GEORGE H. MERRIAM
Director of Admissions
Clark University
Worcester 10, Mass.

Formal application for admission should be made at the earliest possible date. High school students should apply early in their senior year. A visit to the University campus is suggested, but is not required prior to application for admission.

ADMISSION TO THE FRESHMAN CLASS

An application for admission to the freshman class should, if possible, be presented not later than the middle of the applicant's last year in preparatory school.

The completion of a four-year high school course or its equivalent, including fifteen acceptable units of credit, is normally required for admission to the undergraduate colleges. The term "unit" is understood to mean approximately one quarter of a pupil's normal program for the school year.

An applicant must furnish official records from all preparatory schools which he or she has attended.

All applicants for admission must take the Scholastic Aptitude Test of the College Entrance Examination Board. This test may be taken in December, January, February or March of the applicant's senior year in preparatory school. Applicants may also be required to take the Achievement Tests of the College Entrance Examination Board at the discretion of the Admissions Committee. The Achievement Tests should usually be taken in March of the Applicant's senior high school year.

A bulletin of information concerning these examinations may be obtained without charge from the College Entrance Examination

Board, P. O. Box 592, Princeton, New Jersey, or, for the far west, from P. O. Box 9896, Los Feliz Station, Los Angeles 27, California.

The subject matter requirements for admission to the freshman class are as follows:

For the Degree of Bachelor of Arts		For the Degree of Bachelor of Science in Business Administration	
<i>Required subjects, 7 units</i>		<i>Required subjects, 9 units</i>	
English	3 units	English	3 units
(four years)		(four years)	
*Mathematics	2 units	Mathematics	2 units
(algebra and geometry)		(algebra and geometry)	
†Foreign language	2 units	†Foreign language	2 units
(in one language)		(in one language)	
		Social studies	2 units
		(history, government, etc.)	
<i>Restricted electives, 5 or more units in addition to the required units</i>		<i>Elective subjects 6 units</i>	
Mathematics	1 or 2 units	Subjects recognized by the applicant's preparatory school in its regular program, at the discretion of the Committee on Admissions.	
†Foreign language	1 to 4 units		
Social studies	1 to 3 units		
(history, government, civics, economics, etc.)			
Natural sciences	1 to 3 units		
(physics, chemistry, biology, etc.)			
<i>Free electives, not more than 3 units</i>			
Subjects recognized by the applicant's preparatory school in its regular program, at the discretion of the Committee on Admissions.			

*Applicants expecting to specialize in science are advised to present at least three units of mathematics.

†Normally required.

‡A single "beginning unit" in a foreign language is not recognized as an acceptable unit.

Scholastic Quality Requirements. In addition to the Scholastic Aptitude Test of the College Entrance Examination Board, "certification" by the principal of the preparatory school in at least thirteen of the fifteen required units is normally necessary for admission without achievement examinations. An exception may be made if the applicant ranks in the upper quarter of the class with which he graduated.

ADMISSION WITH ADVANCED STANDING

A student who wishes to enter the college after attending another institution of college grade is required to submit a letter of honorable dismissal, a complete transcript of his, or her, academic record at the institution last attended, his high school transcript, and such other information as the Committee on Admissions may request. If admitted, the applicant will be provisionally classified as a freshman, sophomore, junior, or senior and will be permitted to register for a program of studies corresponding to this classification. After a semester in residence with a satisfactory record, appropriate credit for courses of college grade which have been completed elsewhere will be recorded.

A graduate of the three year course of the Worcester Art Museum School may be admitted as a candidate for the degree of Bachelor of Arts with the rank of *junior* in the college. In such cases the usual admission requirements must be met and the general subject-matter requirements of the colleges must be satisfied.

The bachelor's degree will not be conferred upon a student until he has spent at least a year in residence and completed satisfactorily at least five full courses at Clark University, and usually not unless the period of residence includes the two semesters immediately preceding the granting of the degree.

ADMISSION OF SPECIAL STUDENTS

Applicants for admission as special students should address their inquiries to the Dean of Men or Dean of Women and should be prepared to supply evidence of qualification for the study which they wish to undertake.

Induction and Registration

INDUCTION PROGRAM

All freshmen, both men and women, and all upper-class women who are entering the University for the first time meet for a few days preceding the opening of the academic year in September for an induction program.

FACULTY ADVISERS

When a student is admitted to either the Men's College or to the Women's College he or she is assigned to a member of the faculty who advises the student in respect to a program of courses and other matters. At the beginning of the freshman year the advisers are chosen from a limited group of freshman advisers. Later each student is encouraged to select an adviser of his or her own choosing. A change of advisers may be made on formal request addressed to the Dean.

The adviser assists the student in choosing his program of studies and is available at all times for consultation on any matter which the student may wish to discuss with him. Ideally the adviser-student relationship develops into a relationship of mutual regard which frequently endures long after the college course has been completed.

REGISTRATION

Each student is required to register for a detailed program of courses at the beginning of every semester. Official notice is given well in advance of the dates on which registration is required. Failure to register within the period designated involves a charge of one dollar for each day's delay up to a maximum of five dollars.

Changes in registration may be made, with the approval of the student's adviser, for a limited time after the end of the registration period. Later changes involve a formal petition to the College Board.

WITHDRAWAL

After the first four weeks of any semester withdrawal from a course normally involves a record of "failure" in the course. An exception to this regulation is made in cases where the withdrawal reduces the student's program from six courses to five.

Student Programs

An undergraduate student normally carries a program of five courses throughout the academic year, September to June, in addition to required physical education. In general it is expected that a course meeting three times weekly will require a minimum of two hours of preparation for each lecture or recitation. Laboratory periods are usually three hours in length.

A student carrying the regular program should, therefore, expect his college work to require from forty-five to fifty hours of his time per week, in addition to the time required for physical education.

College regulations are designed to permit a large degree of freedom in the adjustment of programs of study to individual differences of interest. Even in the freshman year, when the program is largely determined by the degree for which the student is enrolled, each student makes certain individual choices where alternative requirements or free electives are involved. Such choices deserve the most careful consideration since they frequently affect the general pattern of a student's program for the entire four years of the college course.

FRESHMAN PROGRAMS

A freshman must choose his entire program from courses designated as "open to freshmen."

Beginning in 1957, the following programs are required in the freshman year:

For the Degree of Bachelor of Arts

1. *English 11*, Composition and Literature.
2. *A course in a foreign language*.
3. *A course in "Group A,"* science and mathematics.
4. *A course in "Group B,"* social sciences.
5. *An elective*.

Mathematics 11 must be elected by students who expect to choose a major in Group A. This includes both pre-medical and pre-dental students.

For the Degree of Bachelor of Science in Business Administration

1. *English 11*, Composition and Literature.
2. *Business Administration 10a*, Elements of Distribution. First semester.
Business Administration 10b, Elements of Production. Second semester.
3. *Business Administration 117*, Principles of Accounting.
4. *Mathematics 11*, Freshman Mathematics.
5. *An elective*.

SOPHOMORE PROGRAMS

A sophomore must give priority in his program to any subject requirements which remain to be satisfied and should provide for an introduction to the field or subject in which a "major" or an "integrated program" will be chosen. The remaining elective choices provide the opportunity for each student to broaden the range of his interests.

The selection of a major subject is required of candidates for the

degree of Bachelor of Arts at the time of registering for the sophomore year.

Sophomores may elect any course designated by a number beginning with the numeral 1, indicating "primarily for undergraduates"; they are not admitted to courses "for advanced undergraduates and graduate students," designated by numbers beginning with the numeral 2.

JUNIOR AND SENIOR PROGRAMS

Programs for the junior and senior years should be planned as a unit. This brings the entire college course under scrutiny; concentration, balance and diversity can be seen in relation to each other and adjusted to desired proportions; the inevitable choices between desirable courses, since all cannot be included in the program, can be made and costly mistakes due to haste and the overlooking of important facts can be avoided. Failure so to plan may result in the omission of important courses because of conflicts in the schedule or the alternation of courses in successive years.

The selection of an "area of concentration" is required of each candidate for the degree of Bachelor of Science in Business Administration before the beginning of the junior year.

Juniors and seniors may elect any courses "primarily for undergraduates" or for "advanced undergraduates and graduate students" subject to any conditions stated in the descriptions of the courses. Under special conditions and with the approval of the College Board and of the Secretary of the Graduate Board in each case, seniors who rank in the upper third of their class may be admitted to courses "primarily for graduate students" designated by numbers beginning with the numeral 3.

ACCELERATED PROGRAMS

At least three years of college study in residence is required for a bachelor's degree. A student may earn the degree in this minimum time, or in three and one-half years, if he is prepared to make the additional effort which is required and is able to maintain the required level of scholarship.

Such accelerated programs are possible through a combination of six-course programs during the regular academic year and attendance at summer schools. Credit toward a degree for study at a sum-

mer school is granted only when it is officially authorized in advance in each individual case.

To complete the requirements for a bachelor's degree at the end of three years it is necessary for a student to carry a six-course program through all three years and to attend two six-week summer schools. Only students of exceptional ability and in excellent physical condition are advised to undertake such a program. To complete the requirements for a bachelor's degree at the end of three and one-half years it is necessary for a student to accumulate, within that time, credit for two and one-half courses in addition to a regular program. This may be accomplished without attendance at summer school if the student carries a six-course program through two and one-half years. More commonly a student will attend two summer schools and carry a six-course program through three semesters, or attend three summer schools and carry six courses through two semesters.

SIX-COURSE PROGRAMS

A student whose average grade for any semester is C+ or better is permitted to register for a program of six courses for the following semester.

A senior whose graduation within the academic year depends on the completion of a six-course program during that year may register for such a program in either semester if his average grade for the preceding semester is C— or better.

A freshman may normally register for a program of six courses in the first semester of his freshman year. In subsequent semesters he is subject to the regulation stated above.

For tuition charges see "per course" rate given under "Tuition and General Charges."

WASHINGTON SEMESTER PROGRAM

The University participates in the Washington Semester program of The American University at Washington, D. C. Under this program a small number of superior students may be nominated to attend a semester (normally in the junior year) in the study of the United States government in the nation's capital.

This opportunity is particularly, but not exclusively, attractive to

students majoring in government, international relations, history, economics and sociology. Full credit for the semester's work is given toward the degree at Clark. Inquiry and application should be made to the Chairman of the College Board.

SMALL PROGRAMS

Under special circumstances programs of fewer than five courses may be permitted. In general no change of status or of obligation is involved when a student's program is reduced to four courses, nor is there any reduction in the charge for tuition.

A student whose program consists of fewer than four courses is designated as a part-time student. Part-time students are excused from the requirement in physical education, are not required to attend the weekly assembly and do not pay the "activities fee".

For tuition charges see "per course" rate under "Tuition and General Charges."

PROGRAMS FOR SPECIAL STUDENTS

Special students register for such programs as they agree upon in consultation with the instructors concerned. They are not required to attend the weekly assembly nor are they subject to a requirement in physical education. Special students who register for programs of four or more courses are required to pay the activities fee; others are not required to pay this fee.

For tuition charges see "per course" rate under "Tuition and General Charges."

Requirements for a Bachelor's Degree

The fields in which instruction is offered in the colleges are classified for administrative purposes in four "groups" as follows:

GROUP A (Science and Mathematics). Biology, botany, chemistry, experimental psychology, geology, mathematics, physics, and physiology.

GROUP B (Social Sciences). Economics, education, geography, government, history, international relations, philosophy, psychology, and sociology.

GROUP C (Language and Literature). Greek, Latin, English,

French, German, Russian, Spanish, and an interdepartmental course in language and literature.

GROUP D (Fine Arts). Art and Music.

All college regulations involving a quantitative statement of credit are expressed in terms of courses.

A course as a unit of credit normally implies three or four class meetings or laboratory exercises per week throughout two semesters and constitutes one-fifth of a student's normal program. Where departments offer fractional courses, these will be combined in reckoning a student's total credit in courses. Students admitted to classes primarily for graduate students receive credit of one-half course per semester irrespective of the number of class meetings.

A student in good standing who completes the requirements for either the degree of Bachelor of Arts or the degree of Bachelor of Science in Business Administration as stated below will be recommended for the corresponding degree unless, in the judgment of the College Board, there is cause for withholding the recommendation.

GENERAL REQUIREMENTS FOR A BACHELOR'S DEGREE

The following requirements, 1 through 4, apply to all candidates for a bachelor's degree.

1. *Residence.* Not less than three academic years of college study in residence. At least one full year and usually the last year before the degree is conferred must be spent at Clark University. A year in residence signifies the satisfactory completion of five year courses at Clark University.
2. *Course requirements.* Twenty courses in addition to required physical training. A satisfactory scholarship record must be maintained throughout the entire program.
3. *Physical education.* Three years of physical training, two hours per week. Veterans who have completed the basic training for any branch of military service and those who served in the Merchant Marine are excused from the requirement in physical education.
4. *Assembly.* Attendance at a fortnightly assembly is required.
Requirements 3 and 4 are in addition to the course requirements as stated above.

In addition to the general requirements 1 through 4, the following requirements apply specifically to candidates for the degree of Bachelor of Arts. Special requirements for the degree of Bachelor of Science in Business Administration will be found in the section on that division.

A. Requirements for the Degree of Bachelor of Arts.

5. *A major.* Seven courses.

The major will normally include certain of the courses specified in the following requirements.

6. *Group A.* Two courses, one in each of two different fields.
7. *Group B.* Two courses, one in each of two different fields.
8. *Foreign language.* Minimum, one course.
 - a. One course in the freshman year.
 - b. One course at or beyond the level of a third year college course.
9. *English.* One and one-half courses.
 - a. English 11. In the freshman year.
 - b. An additional half-course in English.
 - c. Satisfactory proficiency in the use of English.
10. *Fine Arts.* A half-course in Fine Arts or Music or a year course in a foreign civilization.

NOTES ON REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

5. Majors.

A *departmental major* consists of seven courses designated by the department for this purpose. Four or five of these must be courses in the major subject; the remaining courses must lie in fields of study closely related to the major subject.

For the completion of an acceptable major at least eleven of the fourteen semester grades involved must be higher than C—.

Mathematics 11 is a requirement in the freshman year for a student who intends to major in Group A, including pre-dental and pre-medical students. This course may, with the approval of the major department, be included in the seven courses constituting the major.

Students majoring in Group C who have not offered at least two units of Greek or Latin for admission are required to take a year's course in either classical civilization or elementary Greek or Latin. The course satisfying this requirement may, with the approval of the major department, be included in the seven courses constituting the major. The choice between "civilization" and language is subject to the approval of the major department. If a lan-

guage course is chosen, this requirement should normally be satisfied during the freshman year.

An *interdepartmental major* includes eight or more courses chosen with regard to related content and purpose in fields which cross departmental boundaries. Two such programs are now available. These will be found fully outlined in the alphabetical list of "Departments and Courses."

6. Group A.

The two courses may not be distributed between more than two fields of study. One of them *must* be a laboratory course.

Courses in the history of the sciences are not counted toward the fulfillment of this requirement.

7. Group B.

The two courses may not be distributed between more than two fields of study.

8. Foreign Language.

Requirements (a) and (b) may both be satisfied by a single course taken in the freshman year.

Students whose previous education has been largely in a language other than English are relieved of the requirement in foreign language upon the completion of English 11.

10. Fine Arts.

The requirement may be satisfied by a half-course chosen from the following list: Fine Arts 11, 12b, 191a, 192a; Music 12, 13, 14; or by a year course: French 113, German 141, or Greek 123a and Latin 123b.

Grades and Examinations

GRADES

At the end of each semester grades are reported for each student in each course in terms of A, excellent; B, good; C, average; D, poor; F, failure. The modifying symbols plus (+) and minus (—) are used with each of these letter grades with the exception of F, giving twelve levels of passing grades. A report of "incomplete" is permitted only when severe sickness or some other equally unavoidable circumstance prevents the completion of a course.

A record of "failure" in a course is final and not subject to change on the basis of any subsequent performance of the student who is involved. Credit for a course in which a failure has been reported may be secured only by repeating the course and earning a passing grade.

SCHOLARSHIP STANDARDS

Courses with the grades of D+, D or D— may not be counted toward a bachelor's degree beyond one-quarter of the total credit required; i.e., not more than five (5) such courses, or their equivalent in fractional courses, may be counted. In the administration of this regulation only grades received and credit earned in Clark University are considered. If grades are not available for some of the twenty courses required for the degree, the maximum credit which may be counted with grades of D+, D or D— is reduced to one-quarter of the total credit from all courses in which grades are available.

Classification of students. A student continues to be listed in the class with which he or she entered college until the end of the third, or junior, year. At this time only those students who have credit for at least fourteen courses with a minimum of eighteen semester grades of C— or better are promoted to the senior class.

Probation. Students with unsatisfactory grades are placed on probation. Failure of a student to remove himself from probation after two consecutive terms or three non-consecutive terms normally results in separation from college.

EXAMINATIONS

Final examinations are regularly given at the end of each semester in all college courses. Approximately two weeks are set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, usually results in a record of failure in the course.

Other examinations and tests may be given at any time during the semester at the convenience of the instructors.

Honors

The colleges award "annual honors" to outstanding students in each of the three lower classes, and grant the bachelor's degree with distinction under the conditions described below.

ANNUAL HONORS

First honors and *second honors* are awarded at the end of each year to members of the freshman, sophomore, and junior classes

who have, in the judgment of the College Board, distinguished themselves by their scholarship during the year.

COURSE HONORS

The bachelor's degree is awarded *cum laude*, *magna cum laude*, and *summa cum laude* to members of each graduating class whose records, in the judgment of the College Board, warrant this distinction.

DEPARTMENTAL HONORS

A program leading to the degree of Bachelor of Arts with honors in a particular subject may be undertaken by a student at the beginning of the junior year. Under this plan a student in cooperation with the honors' adviser of his major department organizes the work of his junior and senior years into a unified program. This program may include a maximum of two "honors courses" in which he works with a large measure of independence under the supervision of the adviser. In the senior year each candidate must pass satisfactorily a comprehensive examination given by his major department.

Any student may apply in writing to his major department for permission to take honors work, not later than the first day of May in the sophomore year. The approval of the department is necessary for admission to such work. In exceptional cases, application may be made and admission approved by the department concerned up to the end of the first semester of the junior year, but only with the consent of the College Board.

Admission to candidacy for departmental honors does not relieve a student from any of the standing regulations of the college except as specifically stated above. A student's candidacy for honors will be terminated at the end of any semester in which he has not maintained a standard satisfactory to his department. If candidacy is terminated for any reason, the amount of credit to be allowed for "honors courses" will be determined by the College Board in consultation with the major department.

On conclusion of the honors program, including a comprehensive examination, the department may recommend the student's graduation with honors, high honors, or highest honors. Only students meeting the standards of the College Board for the degree *cum*

laude may receive departmental recommendation for high or highest honors.

THE CLARK SCHOLARSHIP SOCIETY

The Clark Scholarship Society was organized in 1914 and was made temporarily inactive in June 1953. This change, effected by the executive committee of the society, was considered advisable as a result of the installation of a chapter of Phi Beta Kappa at Clark in 1953. At a meeting on June 6, 1954 it was voted to make the Clark Scholarship Society an alumni organization. Dr. Theodore Nicol was elected president and Mrs. Michael T. Neary, secretary-treasurer.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies—those studies concerned principally with a knowledge, understanding, or appreciation of the natural and social world in which we live. The Society establishes chapters in colleges and universities throughout the United States where the curricula are broadly cultural in scope and where high standards of scholarship are maintained.

In harmony with the underlying purposes of the Society, the Clark chapter, Lambda of Massachusetts, established in 1953, seeks to foster among undergraduates an appreciation of the contributions to culture and civilization which have been made by liberal studies.

Each year the Chapter elects to membership a limited number of juniors and seniors whose programs have been definitely liberal in character and who have achieved distinction in scholarship.

General College Regulations

ATTENDANCE

Students are expected to be present on the first day of each term and to continue in attendance from day to day to the end of the term.

Attendance at a fortnightly college assembly is required, except in the case of part time and special students.

Regulations applying to absences from scheduled class meetings and laboratory exercises are based upon the conviction that such

absences, regardless of their cause, involve a loss to the student and a drag upon the class. Students are, accordingly, expected to be consistently regular in attendance. Subject to this general provision, students are given a considerable degree of freedom in the control of their attendance. It is expected that such freedom will not be abused, and that it will contribute to the growth of each student's sense of responsibility.

Special regulations apply to attendance at assembly and physical education.

PHYSICAL TRAINING

Regular physical exercise is required of all students, with the exception of veterans, for the general promotion of their health and mental efficiency. Physical education is scheduled at times which avoid conflict with recitation hours. Students are usually excused from this requirement only on the recommendations of the medical director.

DINING HALL

Undergraduates who do not live in their own homes are required to board at the Dining Hall. This fact must be recognized and subscribed to by all who seek admission to either the Men's College or the Women's College.

DORMITORIES

Freshman men not living in their own homes or with near relatives are required to room in Estabrook Hall.

Women students who do not live in their own homes or with near relatives are required to room in one of the Women's Dormitories.

For further details see the announcements of the Men's College and the Women's College.

INFIRMARY

The Infirmary, located at 6 Downing Street, opposite the University Library, is open during the academic year. A nurse is in attendance and the University physicians are on call. Facilities are provided for the treatment of emergencies and for minor medical services to all students while they are on the campus; in addition there is provision for the temporary hospitalization of resident students in cases of more serious illness.

For the use of the Infirmary as outlined above and for annual physical examinations supplemented by other auxiliary health services a fee is collected with the tuition in the case of all undergraduates.

Student Activities

Student life at Clark is, as would be expected at a small institution, friendly and informal. Fixed rules and regulations are few, the assumption being that students will conform to the recognized standards of morality, good order, and consideration for others. College activities are under the minimum degree of faculty oversight which is necessary to insure responsibility in business dealings and consideration of the welfare of the individual student and of the college community.

The Activities Fee. Non-athletic activities are partially supported by an activities fee. This fee also admits a student, without additional charge, to all athletic contests held on the college grounds, provides him with the college newspaper, and admits him to plays and concerts presented by the dramatic and musical clubs.

Activities. The programs in athletics are described in the sections dealing with the Men's College and the Women's College.

Opportunities for recreation are found in dramatic clubs and musical clubs, under expert direction; in editing and publishing the college newspaper (*The Clark Scarlet*), the literary magazine (*Helicon*), and the senior yearbook (*Pasticcio*); also in such organizations as the Debating Council and International Relations Club.

Formal "proms", informal "Bohemes" and fraternity activities furnish further opportunities for social life. One of the University buildings houses the Student Union. For many students, the most prized opportunity for social contacts is in the offices and laboratories, where members of the faculty may be visited with ease and freedom.

Eligibility for Non-competitive Activities. All students may participate so long as their scholarship proves satisfactory. Details are published in the Students' Handbook.

Fellowships, Scholarships and Loans

Fellowships and scholarships are provided by the University from endowed funds and from other sources. Financial aid to students is available also in the form of grants from a number of special funds. A limited amount of part-time employment is available in the various offices and departments of the University. Frequently, as in the case of departmental assistants, this is of a kind which yields useful experience.

Loans for educational purposes are available from a number of funds which have been created for this purpose. Loans are made to undergraduate students at an annual interest rate of 4%. It is expected that all borrowers will begin repayment of loans shortly after graduation.

Many scholarships and educational loans are provided by local sources in communities throughout the nation. Any interested person should address inquiries to school officials, churches, fraternal organizations, chambers of commerce, etc.

Detailed statements and lists of the individual funds may be found in the announcements of "The Graduate Schools" and "The Colleges."

SCHOLARSHIPS

Undergraduate scholarships are generally awarded on the basis of financial need with due regard to character and ability. The scholarships vary in amount and are in some cases restricted to residents of a definite locality or to those studying particular subjects.

To be eligible for a scholarship, an entering freshman must have a scholastic record which places him in the upper third of his preparatory school class. A college student is eligible if he has secured a rank in the upper half of his class for the preceding semester.

Scholarships are awarded at the beginning of each semester. Ordinarily an award for the first semester is continued through the second semester if the holder maintains a position in the upper half of his class for the first semester.

Applications for undergraduate scholarships should be filed at an early date on forms which may be secured from the college office.

Aid given in the form of scholarships is not regarded as a loan. It is recognized, however, that those who receive such aid may wish to return the amount in later years. Funds for scholarship purposes are much needed and greatly appreciated.

The following scholarships are currently available to students in the undergraduate colleges with the restrictions noted.

The Ellis-Hubley Competitive Scholarships. These are competitive scholarships restricted to male residents of Worcester who have graduated from Worcester secondary schools. The stipends, \$800 annually to each beneficiary, are provided by money set aside from the income of funds bequeathed in memory of Gordon A. Hubley, Clark 1910, and of Theodore T., and Mary G. Ellis. One appointment is made each year to a member of the freshman class and the award is normally continued throughout the four years of the college course.

A candidate must receive the recommendation of the Principal or Head Master of the school in which his preparation for college is completed, before his application can be considered. Two full tuition scholarships are awarded annually to applicants who, in the judgment of the Committee on Scholarships, stand next below the successful applicant.

The Jonas G. Clark Scholarships. These scholarships have been established by the trustees to provide either full tuition or half tuition for undergraduate male and female students from outside of Worcester.

The Theodore T. and Mary G. Ellis Scholarships. These scholarships provide either full tuition or half tuition for male or female residents of Worcester who are students in "the collegiate department of Clark University."

The Sanford Memorial Scholarship. The Sanford Memorial Fund was established by alumni of the University in honor of Edmund C. Sanford, president of Clark College from 1909 to 1920. The Fund provides an annual scholarship amounting at present to approximately \$200 for a male senior undergraduate.

The Livermore and Ambulance Scholarship. The endowment for this scholarship was provided by citizens of Worcester in honor of Charles Randall Livermore, the first Clark man to fall in battle in the first World War, and of his companions in the Clark Unit of

Ambulance Drivers. Fifty dollars or more is awarded annually on the basis of academic success, character, and usefulness to the college. This scholarship is for male undergraduate students who are residents of Worcester County.

The Henry A. Willis Scholarships. Male students from Fitchburg, Massachusetts, and vicinity have first consideration in the award of these scholarships. In the absence of suitable candidates from this community grants may be made to others.

The Helen Brewster Randolph Memorial Scholarship. A fund, established by the late Professor Charles B. Randolph in memory of his mother, provides about \$250 annually for scholarships restricted to male college students, preferably those whose major is a foreign language.

The Gordon A. Hubley Scholarships. These scholarships are provided by a fund which was bequeathed by Alice B. Hubley in memory of her son, a graduate of the college in the class of 1910. The income is for the assistance of male undergraduates who are residents of Worcester.

The Alice Friend Newton Memorial Scholarship. This scholarship provides full tuition for a student in the Women's College whose major is psychology.

The William Richardson Scholarship. This scholarship was established by a bequest of Carlton E. Richardson of the college class of 1908 as a memorial to his father. The income of a fund of \$7,500 is available "preferably for the education - - - of boys of the Protestant faith."

The Jennie L. Richardson Scholarship. This scholarship was established by a bequest of Carlton E. Richardson of the college class of 1908 as a memorial to his mother. The income of a fund of \$7,500 is available "preferably for the education - - - of girls of the Protestant faith."

The Ernest R. Whitman Memorial Alumni Scholarship. The fund, established by the Alumni Association in honor of the Director of Physical Education for Men at Clark College from 1904 until his death in 1948, provides financial aid to men or women students possessing high qualities of leadership.

The B'nai B'rith Scholarship. The Worcester Chapter, Order of

B'nai B'rith provides a scholarship which is primarily but not exclusively for the aid of Jewish students.

The Probus Club Scholarship. The Probus Club of Worcester offers an annual scholarship of two hundred dollars.

The Clark University Faculty Women's Club Scholarships. These scholarships are available to undergraduate students, either men or women, who rank high in intellectual and personal qualities.

The Clark University Alumnae Association Scholarships. Two scholarships are customarily offered by the Alumnae Association to students in the Women's College.

The National Council of Jewish Women Scholarship. The Worcester Section, National Council of Jewish Women, awards a \$200 scholarship each year to a Jewish girl from Worcester or Worcester county who is attending Clark University.

The Soroptimists Club Scholarship. The Soroptimists Club of Worcester provides an annual scholarship for a student in the Women's College.

The Aaron Fuchs Memorial Scholarship Fund, given by Mrs. Celia Fuchs in memory of her husband and in honor of her sons Lawrence and Jerome Fox of the classes of 1944 and 1953 respectively, provides scholarship aid for non-residents of Worcester or of Worcester County. Awards under this fund are made by the Scholarship Committee.

EDUCATIONAL LOANS

Loans are available for undergraduate students from the funds listed below. These loans bear interest at the rate of 4% per year. Applications for loans should be made at the office of the Treasurer.

THE ALUMNI LOAN FUND was established by the trustees and the alumni.

THE ESTABROOK LOAN FUND was created by the generosity of the late Arthur F. Estabrook of the Board of Trustees.

THE HASKELL TALAMO LOAN FUND has been established by relatives and friends of the late Doctor Haskell Talamo, A.B., Clark University, 1916.

THE LOUIS N. WILSON FUND, established by the first librarian of Clark University, is a loan fund for male students in the college.

The Men's College

Clark College

The Collegiate Department of Clark University, popularly known as Clark College, was established in 1902. Originally attendance was restricted to men and a three-year program led to the degree of Bachelor of Arts. In 1922 the normal period of residence for the bachelor's degree was extended to four years, in 1941 a second program in Business Administration was introduced which now leads to the degree of Bachelor of Science in Business Administration and in 1942 women were admitted to college classes.

The establishment of the financially independent Women's College made possible an enrichment of the undergraduate curriculum through an agreement under which men and women attend the same classes and the two colleges share the costs of administration and instruction.

FRESHMAN INDUCTION PROGRAM

The freshman class of the Men's College assembles a few days before the beginning of the academic year in September for an "induction period." During this period the members of the class become acquainted and meet a selected group of upper class students as well as members of the college staff. Formal activities include tests which assist in placing a student in the proper class sections, individual and group conferences and registration for a program of studies.

It has been customary to spend the induction period at some well-equipped camp where there are ample facilities for recreation.

THE MEN'S DORMITORY — ESTABROOK HALL

Freshman men who do not live in their own homes are required to room in the freshman dormitory, Estabrook Hall.

Occasionally there may be accommodations in the dormitory which are not required for freshmen. In such cases these accommodations may be rented by upperclassmen.

Rooms are assigned to freshmen in order of application, when the application is accompanied by the deposit of fee. Students who

indicate a desire for a room together will be accommodated whenever possible.

This deposit is returned, less a charge for lights and for any damages to the room or its furnishings, after the key to the room is surrendered to the Bursar.

THE MEN'S SENIOR HONOR SOCIETY, GRYPHON

The men's senior honor society, Gryphon, selects each year from the junior class a group of outstanding men who constitute the membership of the society for the following year. The society plays an important part in campus life and in maintaining the traditions of the college. Among its regular functions are the supervision of the annual "rope pull" between the freshman and the sophomore classes and the management of "Spring Spree Day."

ATHLETICS

Students in the Men's College have the opportunity to participate in intercollegiate soccer, baseball, tennis, basketball, golf and crew. Competent coaches have immediate supervision over the athletic teams. In addition to the program in intercollegiate athletics there is an extensive program of intra-mural sports.

Eligibility for Competitive Activities. Participation in organized extracurricular competitive activities is denied only when a student's scholastic record indicates that continuance in an activity might be responsible for scholastic failure.

Any student carrying less than a full program of studies is ineligible unless his reduced program permits graduation at the end of the year in which that program is carried.

Students admitted with advanced standing from another college are ineligible during the first half-semester of residence at Clark College.

A special student is normally not entitled to participate in competitive activities of the college. The College Board may, however, permit such participation in the case of a special student who is enrolled for a program of five courses.

General supervision of the athletics program is vested in the Committee on Athletics, consisting of the Directors of Physical Education, the faculty Committee on Athletics, and the Athletic Council.

The Women's College

The Women's College of Clark University was established in the fall of 1942. Its financial basis is entirely distinct from that of the Men's College although it shares, through a cooperative arrangement, the services of the same administrative and teaching staffs.

Women attend the same classes as men and are subject to the same requirements for admission and for graduation with the exception of a required course in physical education.

General supervision of women students rests with the Dean of Women, Miss M. Hazel Hughes.

The Advisory Board for the Women's College assists the administration in respect to general policy and social affairs.

ADVISORY BOARD FOR THE WOMEN'S COLLEGE

MRS. MYLES MORGAN,

Chairman

MRS. ROBERT S. BOWDITCH,

Secretary

MRS. LAURENS C. SEELYE

MISS ALICE F. SHEEHAN

MRS. JOHN GRIEFEN

MRS. HOWARD B. JEFFERSON,

honorary member

MRS. ROGER S. GREENE,

Vice-Chairman

MRS. GEORGE L. STOUT

MRS. FORREST E. ALEXANDER

MRS. ERWIN C. MILLER

MISS MARIAN G. CRUIKSHANK

MISS M. HAZEL HUGHES,

Dean of Women

The center for women's activities on the campus is the Women's Lounge, located on the main floor of Jonas G. Clark Hall. Attractively decorated and comfortably furnished, the lounge provides a meeting place for formal or informal groups and in general serves the comfort and convenience of women students.

The Women's Gymnasium with its connected dressing room and shower room occupies the western end of the ground floor of Jonas G. Clark Hall. Here are located also a second lounging room and a lunch room.

INDUCTION PROGRAM

The freshman class of the Women's College and all women transfer students assemble at the college on Tuesday before the opening of the academic year in September for an induction program. Dur-

ing this period the new students become acquainted and meet a selected group of upper class students as well as members of the college staff. Formal activities include certain tests which assist in placing students in the proper class sections, individual and group conferences and registration for a program of studies.

It has been customary to spend the induction period at some attractive and well-equipped girls' camp or summer hotel where there are ample facilities for recreation.

DORMITORIES

Undergraduate women who do not live at home are expected to live in one of the women's dormitories. Other arrangements are permitted only on written request from a parent or guardian and the consent of the Dean of Women.

There are four dormitories, each housing from fifteen to twenty-six students. Each has its House Mother and a dormitory committee which meets with the House Mother to consider matters pertaining to dormitory living such as house meetings, the social life of the dormitory, the observance of dormitory regulations, etc. These groups also act as advisory boards for the students with whom they are associated.

A Dormitory Council composed of representatives from the four houses, the four House Mothers and the Dean of Women meets once a month to discuss matters of interest to the dormitory residents. This board often appoints student committees to make surveys in particular areas of student life.

Rooms are assigned to freshmen when the application is accompanied by the deposit fee.

This deposit is returned, less a charge for lights and for any damages to the room or its furnishings.

Students who indicate a desire for a room together will be accommodated whenever possible.

THE WOMEN'S SENIOR HONOR SOCIETY, PLEIADES

The women's senior honor society, Pleiades, selects each year from the junior class a group of outstanding women who constitute the membership of the society for the following year. The society plays an important part in campus life and in maintaining the tradi-

tions of the college. In recent years it has provided funds for scholarship aid to one or more women students.

PHYSICAL EDUCATION AND ATHLETICS

There is a physical education program for women which is designed to improve posture and general health. Every student is given a physical examination at the beginning of each year.

Attendance at classes in physical education is required on the basis of two periods per week for three years. Body mechanics and one of the rhythmic activities is required during the three years. Participation in one group sport and one individual sport is required. Folk dancing, square dancing and modern dancing are also offered. Swimming and life saving courses are available through the entire year by arrangements with the Young Women's Christian Association. These courses are conducted by a member of the physical education staff of the University.

Several types of athletics are open to women. Offered in the fall and spring are hockey, crew, archery, tennis, fencing, and golf. Tournaments are held in the spring and fall and a cup is awarded to the winner of each event. During the winter months basketball is the principal organized athletic activity; volleyball and badminton are also offered. Women students use their own gymnasium for practice, but have the use of the University Gymnasium for games with outside organizations.

The Women's Athletic Association arranges for all sports activities; both within the college and with other colleges in the New England area.

The Division of Business Administration

JAMES M. HUND, Ph.D., Director of the Division of Business Administration and Associate Professor of Economics and Business Administration.

ADVISORY COMMITTEE TO THE DIVISION OF BUSINESS ADMINISTRATION

NATHAN T. BASCOM, President, Worcester Mechanics Savings Bank

JOHN W. COGLIN, President, Coghlin Electric Company

EVERETT W. HICKS, Vice President, Norton Company

FREDERICK W. HOWE, President, Crompton and Knowles Loom Works

H. LADD PLUMLEY, President, State Mutual Life Assurance Company

RICHARD C. STEELE, Business Manager, Worcester Telegram Publishing Company

PARKER TROWBRIDGE, Resident Manager, Paine, Webber, Jackson and Curtis

The Division of Business Administration presents and supervises a four year course of study open to students of either of the undergraduate colleges. The "core curriculum" is given cooperatively by the Departments of Economics and Sociology, English, History, Government and International Relations, Mathematics and the Natural and Physical Sciences.

General supervision of the program rests with the Administrative Committee representing the faculty. An Advisory Committee listed above assists in the formation of general policies.

THE BUSINESS ADMINISTRATION PROGRAM

The program leading to the degree of Bachelor of Science in Business Administration is designed as a four year preparation for young men and women intending to make careers in business.

Students who enroll in this program are subject to the general college regulations as well as to the special requirements for the degree of Bachelor of Science in Business Administration. They are encouraged to choose electives in other fields such as the social sciences, fine arts and music, science and the humanities.

The course of study prescribed for the business student is intended to combine a broad exposure to liberal subjects with specialization in selected areas of commerce and industry. An opportunity is provided to become acquainted with the basic characteristics of modern business, not just with what the units are and how they operate, but also with how they are organized and related to one another. Though concentration in some field within the general area of business administration is an integral part of the program, the major emphasis is not on techniques which often have to be relearned to be applicable to a particular job, but rather on principles, methods of approach and analysis useful in meeting problems with which the graduate is likely to be confronted.

Requirements for admission and the freshman program are covered above under the heading "The Undergraduate Colleges." Students entering from other institutions with advanced standing will be expected to meet the same requirements as entering freshmen, and their records will be individually evaluated to determine the amount of credit to be allowed for work done in these institutions.

In addition to the program leading to the degree of Bachelor of Science in Business Administration, the colleges offer a less intensive program in business leading to the degree of Bachelor of Arts.

SPECIAL REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

An integrated program of sixteen and one-half courses. This program will include a "core curriculum" of eleven and one-half courses and five courses of restricted electives. The "core curriculum" consists of the following courses:

1. Accounting, one course.
Business Administration 117, Principles of Accounting. In the freshman year.
2. Business Law, one course.
Business Administration 20.
3. Economics, one and one-half courses. (Not to be taken concurrently.)
 - a. Economics 11, Principles of Economics.
 - b. Economics 13a, Money and Banking.
4. English, one and one-half courses.
 - a. English 11, Composition and Literature. In the freshman year.
 - b. Business Administration 17a, Public speaking.

5. Finance, one-half course.
Business Administration 18a, Corporation Finance.
6. Government, one course.
Government 15, Introduction to Government.
7. Management, two courses.
 - a. Business Administration 10a, Introduction to Business and 10b, Principles of Marketing. In the freshman year.
 - b. Business Administration 250, Analysis of Business Problems. In the senior year.
8. Science and Mathematics, two courses.
 - a. Mathematics 11, Freshman Mathematics. In the freshman year.
 - b. A laboratory science.
9. Statistics, one course.
Business Administration 16a, Business Statistics I and 16b, Business Statistics II.

THE AREA OF CONCENTRATION

During the junior and senior years students will specialize in one of the areas of concentration offered by the Division. This choice must be made and submitted to the student's adviser at the end of the sophomore year. A program will not be approved unless at the end of the four year course of study it will provide for at least five courses in Business Administration or closely related subjects in addition to the required courses listed above. Areas of concentration currently offered are listed below along with suggested courses. These are in addition to the courses required of all candidates for the degree.

General Business—at least one different full course (two half courses) in three out of four of the following areas of concentration.

Accounting

- B.A. 127, Intermediate Accounting
- B.A. 128, Cost Accounting
- B.A. 129a, Federal Tax Accounting
- B.A. 227b, Auditing
- B.A. 237, Advanced Accounting
- B.A. 181a, Industrial Management

Business Economics

- Econ. 13b, Money and Banking (second half)
- Econ. 15a, Public Finance
- Econ. 205a, Intermediate Economic Theory
- Econ. 21b, National Income Analysis
- Econ. 22, Labor Economics and Labor Problems
- Econ. 207, International Economics
- B.A. 19b, Introduction to Investments

Industrial and Personnel Management

- B.A. 112a, Personnel Management
- B.A. 181a, Industrial Management
- B.A. 182b, Principles of Supervision
- B.A. 183, Industrial Relations
- B.A. 190b, Human Relations
- B.A. 209b, Administration
- Psych. 170b, Social Psychology

Marketing

- B.A. 109b, Sales Management
- B.A. 115a, Advertising
- B.A. 125b, Retailing Principles
- B.A. 203a, Marketing Research
- B.A. 203b, Sales Forecasting
- B.A. 230b, Marketing Policies
- Econ. 205a, Intermediate Economic Theory
- Econ. 207, International Economics

Special Note

Students desiring a less intensive course in Business Administration may choose Economics and Sociology as their major department and become candidates for the Bachelor of Arts degree. They must meet all requirements for this degree including those in English, Fine Arts, foreign languages and science. Freshmen should take the normal college program for that year and elect B.A. 10 for the Group B requirement. The sophomore program should include B.A. 117 and Econ. 11. In each of the two last years students should elect at least one course in economics and two courses in business administration. The following courses, however may *not* be counted for credit toward the degree of Bachelor of Arts: B.A. 13a, 17, 109b, 115a, 124b, 125b, 128, 129a, 181a, 182b, 227b, 237.

Courses in business administration are listed with descriptions under "Business Administration" in the alphabetical list of "Departments and Courses," which follows.

Graduate Schools

The Graduate School

The Graduate School of Geography

The Graduate School

GENERAL INFORMATION

Clark University was initially established as one of America's first institutions dedicated exclusively to graduate study and research. Its faculty and graduates have endowed the University with an impressive record of accomplishments through the years.

Today, the University continues to emphasize graduate education by offering to both men and women special facilities and advanced instruction required for independent study and research.

Programs leading to the degrees of Master of Arts and Doctor of Philosophy are available to qualified holders of a bachelor's degree or its equivalent of attainment.

MASTER OF ARTS degrees are offered in the fields of biology, chemistry, mathematics, physics, economics, history, government, international relations, geography, sociology, psychology, and education.

DOCTOR OF PHILOSOPHY degrees are available in chemistry, economics, history, international relations, geography and psychology.

Departments which are not at present organized to accept candidates for graduate degrees, do offer numerous courses, not listed above, which are suitable for inclusion in a program of graduate study.

Scholarships and fellowships afford financial aid to candidates for the graduate degrees and are listed at the end of this section. Additional information peculiar to the Graduate School of Geography is contained in the next section of the catalogue.

General inquiries and correspondence concerning the Graduate School should be addressed to:

The Secretary of the Graduate Board,
Clark University,
Worcester 10, Massachusetts.

Inquiries concerning specific programs of graduate work and applications for admission should be addressed to the Chairman of the department concerned.

ADMISSION TO THE GRADUATE SCHOOL

Admission to the Graduate School may be granted only by the Graduate Board on the recommendation of a department of the University. Admission does not imply admission to candidacy for a degree.

Application. A prospective applicant should communicate with the department in which he expects to do his major work. If he is encouraged by the department to make application, he will be provided with application blanks. These should be returned to the chairman of the department with an official transcript of undergraduate work, and letters of recommendation from at least two persons who are competent to judge the applicant's qualifications.

In addition, applicants for admission to the Graduate School are strongly urged, and may be required, to submit a record of attainment in the Graduate Record Examination, given by the Educational Testing Service, Princeton, New Jersey.

For earnest consideration, applications for both admission and for financial aid should be completed not later than March 1 if the applicant intends to begin his studies in September. However, applications may be submitted at any time throughout the year and periodically are considered by the Graduate Board.

Admission. In granting admission, the Graduate Board may, with the advice of the department, prescribe a minimum period of residence, never less than one year, and other definite requirements, including courses in particular subjects, as prerequisites for a graduate degree.

Admission to the Graduate School is granted for entry only at a specified time, and lapses if the student fails to enter at that time. If, after an applicant has entered the University as a regular student, his period of graduate study is broken by more than a year, he must make formal application for reinstatement.

Admission as special or part-time graduate students may be granted to qualified applicants who do not wish to work for a degree or who cannot devote full time to study.

THE DEGREE OF MASTER OF ARTS

An academic year of full-time study in residence, or its strict equivalent in summer sessions and part-time study, is a minimum

requirement for a master's degree. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the university faculty.

A reading knowledge of a foreign language, usually French or German, may be required of candidates for the degree of Master of Arts at the discretion of the major department.

Application for admission to candidacy for a master's degree should be filed with the Secretary of the Graduate Board not later than the first week of the last full semester which the student expects to spend in residence as a candidate for this degree.

Applications will be considered by the Graduate Board when the student has:

1. Completed one semester of full-time graduate work or its equivalent in residence at this university;
2. Obtained the written endorsement of his major department;
3. Paid the diploma fee (\$5) and publication fee (\$10).

Candidacy for the degree of Master of Arts holds good for three years from the date of admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If the candidacy expires without the degree having been awarded, the diploma and publication fees, less any expenses incurred, are returned.

Course requirements. Each student must meet a minimum course requirement of five courses, or their equivalent in half courses. The program must be approved by the major department. One of the courses may be a research course devoted to the preparation of the thesis.

Thesis. The thesis will be written on a topic in the field of the student's special interest under the supervision of a member of his major department. A copy of the thesis, a précis of it, approved by the supervising instructor, and an academic history page must be deposited in the Registrar's office not later than three weeks before the date of the Commencement at which the degree is to be conferred. A second copy of the thesis, with a copy of the précis must be delivered to the major department. The précis must not exceed seventy-five words in length.

The thesis is deposited by the Registrar in the University Library. The précis is printed by the University in an annual publication.

Each candidate must make a satisfactory record in such written examinations as may be required by the major department, and in a final oral examination by a committee of three or more, two of whom must be members of the Graduate Board.

THE DEGREE OF MASTER OF ARTS IN EDUCATION

The residence, candidacy, course, and examination requirements are basically the same as those listed above for the Master of Arts.

Thesis. Students may choose one of the following options, subject to the approval of the Department of Education:

- (1) Prepare a thesis or special report, as required for the M. A.
- (2) Elect two additional semester courses in subject matter fields.
- (3) Elect a two-semester, or double, seminar in which papers are prepared and presented to fellow students and staff.

For further particulars, see the announcement of the Department of Education.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation, and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of Doctor of Philosophy.

Residence. The minimum requirement is one year of full-time study, or its equivalent in part-time work, in residence, broadly defined as graduate work done at Clark University under the immediate supervision of at least one member of the University faculty.

If the M. A. has been earned at Clark, this requirement is an addition to the residence requirement for that degree. For the Ph.D. degree, four courses, or the equivalent in half-courses, is normally a full-time program.

Requirements in foreign languages. A prospective candidate for the doctor's degree is advised to prepare himself early for the examinations in the reading of modern foreign languages. Usually the student must pass two language examinations. French and German are normally required; but the Graduate Board may authorize the

substitution of another language for one of these, and a student's major department may require additional languages.

A department, under special circumstances and with the approval of the Graduate Board, may permit a student to substitute the following for the usual language requirements: (1) The passing of an examination in either French or German and in addition, certification by the department that the candidate has demonstrated a working knowledge of the language in the departmental program; (2) The satisfactory completion of an additional program of studies in a field related to the major program.

The language examinations are conducted by a committee composed of representatives of the modern language departments and a representative of the student's major department. The results of the language examinations are reported to the Registrar by the language committee; the results of the substitute requirements are reported by the department. A student must fulfill the above requirements before he will be permitted to take the preliminary examination for the degree of Doctor of Philosophy.

Foreign students whose native tongue is not English may petition the Graduate Board, subject to the approval of the department concerned, to omit either French or German if both languages are not necessary for the field of concentration.

Admission to candidacy. Applications for admission to candidacy must be filed not later than November first in any academic year, by students who hope to receive the degree at the end of that academic year.

An application for admission to candidacy will be considered by the Graduate Board when the applicant has:

1. Completed two full academic years of graduate work (or its equivalent in part-time work), one of which must be at Clark University;
2. Passed the required examinations in foreign languages, or completed satisfactorily the substitute program;
3. Passed a preliminary examination in his chosen fields of study;
4. Obtained the written endorsement of his major department;
5. Paid the diploma fee (\$25) and publication fee (\$30).

Candidacy for the degree of Doctor of Philosophy holds good for

three years from the date of admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If candidacy expires without the degree having been awarded, the diploma fee and publication fee, less any expenses incurred, are returned.

Dissertation. A dissertation which is expected to make an original contribution to some special field of knowledge is required of each candidate.

The dissertation, approved by the chief instructor, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words in length, and a précis, not exceeding 75 words, both approved by the instructor under whom they were written, are also required.

Not later than four weeks before Commencement Day at which the degree is to be conferred the first, or ribbon, copy of the dissertation, together with two official title pages, an academic history page, the first copy of the abstract and of the précis, each in a form prescribed, must be delivered to the Registrar of the University. At the same time a second copy of the dissertation and of the abstract may be required by the major department.

The Registrar deposits the dissertation and the abstract in the University Library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Incorporated, of Ann Arbor, Michigan, and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts*, which is widely distributed both in this country and abroad to subscribing libraries and leading abstracting services. The précis is printed in an annual publication by the University.

Final examination. The final examination is an oral and lasts for at least two hours; additional written examinations may be given if the major department so directs. The candidate is expected to defend his dissertation and at the discretion of the examining committee, may be questioned on the entire special field of his study. The oral examination is conducted by a committee of at least four members, including the chairman and one other member of the major department, a member of the Graduate Board under whom the candidate has done no work (unless such a member has participated in the preliminary examination of the candidate), and

such other members of the Graduate Board as may be duly appointed. The president of the University is authorized to invite any person from within or without the University to be present and to assist in the examination.

GRADUATE FELLOWSHIPS, SCHOLARSHIPS AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided by the University from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds and, in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Frequently, as in the case of departmental assistants, this is of a kind which yields useful experience.

Both outright grants and loans for educational purposes are provided in many sections of the United States by local foundations, fraternal organizations, civic groups, etc.

Graduate fellowships and scholarships are available for prospective candidates for all Master of Arts and Doctor of Philosophy degrees. Appointments are made on the basis of scholarly promise and seniority and on the recommendation of the departments. The number of appointments available in any department varies from year to year. Fellows and scholars are expected to coöperate with the staffs of the various departments, and may by mutual agreement undertake limited responsibilities. They are never called upon to perform services which would interfere with the completion of a full-time program of graduate study.

In a case where assistance in the department, either in research or teaching, is to be a duty of the fellow, an appointment may be designated as a research fellowship or a teaching assistantship. An appointment of this nature is made on the recommendation of the department and with the consent of the applicant.

Application for a scholarship or fellowship to begin in September should be made before March 1 to the chairman of the department in which the applicant expects to do his major work. Applications received late are acted upon periodically by the board. All applications, after endorsement by the department chairman, go to the Graduate Board for final action.

According to an agreement between the members of the Association of American Universities, elections of fellows and scholars will be communicated on April first, but not before, to each successful candidate.

Stipends for graduate fellowships and scholarships are provided by the following funds:

THE GEORGE FRISBIE HOAR FUND, the gift of Andrew Carnegie in honor of the second president of the Board of Trustees.

THE AUSTIN S. GARVER FUND, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

THE CHARLES H. THURBER FUND, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the Board from 1919 to 1937.

THE GEORGE S. BARTON FUND, a bequest from the Honorable George S. Barton of Worcester. The income of this fund is for the benefit of native born citizens of the City of Worcester.

THE ALUMNI ASSOCIATION FUND, provided by alumni who hold the degree of Doctor of Philosophy, is for the benefit of students who are studying for that degree.

Teaching assistantships are available in certain departments. These involve a specified amount of instruction with stipends which vary according to the amount of service agreed upon.

Assistantships are available in several departments. These positions involve a variety of services with stipends to correspond, and usually provide the student with experience which will be useful in his later professional work.

Inquiries concerning any of the above types of appointment should be addressed to the chairman of the department concerned.

AID FOR GRADUATE STUDENTS

Student aid is available from the following funds, with the restrictions noted.

THE JOHN WHITE FIELD FUND established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow.

THE ELIZA D. DODGE FUND. The income of this fund is granted to graduate students of limited means who are engaged in research work.

THE CHESTER BLAND FUND. The income of this fund is preferably used to provide aid to a promising student, either in residence or engaged in research elsewhere under the direction of the department of History, Government and International Relations. It may also be used to defray the expense of visiting lecturers or of departmental research.

THE MORTON L. "SONNY" LAVINE FOUNDATION, a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History, Government and International Relations.

LOANS FOR GRADUATE STUDENTS

Loans are available for graduate students from the funds listed below. These loans bear interest at four per cent per year.

Applications for loans should be made at the office of the Treasurer.

THE MARY S. ROGERS SCHOLARSHIP AND LOAN FUND was established in 1926 for the benefit of students in the Graduate School.

THE SARAH M. THURBER LOAN FUND was established by the late Dr. Charles H. Thurber, former president of the Board of Trustees as a memorial to his mother.

The Graduate School of Geography

SAMUEL VAN VALKENBURG, Ph.D., Director of the Graduate School
of Geography and Professor of Geography

RAYMOND E. MURPHY, Ph.D., Professor of Economic Geography;
Editor, *Economic Geography*

RICHARD J. LOUGEE, Ph.D., Professor of Geomorphology

HENRY J. WARMAN, Ph.D., Professor of Geography; Secretary of
the Graduate School of Geography

EDWARD C. HIGBEE, Ph.D., Professor of Geography

GUY H. BURNHAM, A.M., Cartographer and Instructor in Geography

ERWIN RAISZ, Ph.D., Visiting Professor on Cartographic Techniques

SPECIAL LECTURERS, 1956-57

ROBERT E. HUKÉ, Ph.D., Department of Geography, Dartmouth
College

BENJAMIN SHWADRAN, Ph.D., Editor, *Middle Eastern Affairs*

JEAN GOTTMAN, Ph.D., Institute for Advanced Study, Princeton,
New Jersey and Research Director, Study of Megalopolis, The
Twentieth Century Fund, New York

GRADUATE WORK IN THE SCHOOL OF GEOGRAPHY

(Please read also the preceding section of this catalogue, under
the heading "The Graduate School".)

The Graduate School of Geography offers opportunity to properly qualified students for advanced training in geography. The map collection, libraries, and special laboratories for cartography provide unusual facilities for research work in residence.

The Staff, composed of specialists in their various fields of geography, must spend part of their time in travel and field studies. While in residence, the staff members offer regular courses of instruction and direct advanced students in research work.

Special lecturers, both American and foreign, supplement the regular Staff. Not all courses of instruction are offered each year; many are given in alternate years. All graduate students are encouraged to undertake independent field studies as part of their university work.

The degree of Master of Arts

Work is offered leading to the degrees of Master of Arts and Doctor of Philosophy in Geography. Candidates for the master's degree will pass written examinations in at least six of the following fields: physiography, climatology, soils, biogeography, land utilization, economic geography, human geography and cultural geography, regional geography, political geography, and urban geography. The oral examination for the master's degree covers four fields approved by the Staff. The master's degree requires two years except for those whose preparation has been adequate enough in fundamentals to enable them to qualify in less time.

The degree of Doctor of Philosophy

Candidates for the doctor's degree in geography are required to submit superior written examinations, and to pass a general oral examination covering six fields approved by the Staff. This oral examination will be scheduled after language requirements are fulfilled. In general, a year of work beyond the master's degree should prepare a candidate for the general examination preliminary to his acceptance as a candidate for the doctor's degree and to his concentration work for his dissertation. This year of course work may well include, besides certain advanced courses in geography, related advanced studies in other fields.

Theses and dissertations

The master's thesis must be submitted to the major professor at least three weeks before it is to be deposited with the Registrar. This is necessary since theses must rotate among and receive final approval of all staff members. Doctoral dissertations must be submitted at least four weeks before the completed copies are due at the office of the Registrar. Dissertations must be circulated first and then defended. Since the final copy of dissertations is on special thesis paper, it is requested that candidates submit for staff circulation the next-to-final drafts. Such a procedure facilitates changes before the dissertations are typed in final form.

Attention is called to the fact that all dissertations are now reproduced in full on microfilm. Since maps and other graphic devices in color will not reproduce satisfactorily, it is recommended strongly

that such features be done in black and white for the master copies of dissertations.

DISTINCTIVE FEATURES

In addition to its location in a natural setting rich in physical attributes worthy of investigation, the Clark University Graduate School of Geography is within easy access of such research centers as Harvard and Yale Universities, Boston cultural centers and the American Geographical Society in New York.

The Clark Graduate School has become a traditional "port of call" for most professors of geography in this and other countries. Their stays have ranged from one hour to as long as six months or a year. Clark graduate students are invited to, and do, visit with these leaders in the field of geography.

The graduate students are assigned desks and shelves in the Geography Workroom on the first floor. Staff offices are located on the floor immediately above; hence conferences are easily and frequently arranged. Both workroom and classroom have immediate connections with the periodical room and the open shelves of the library. A general conference room where visiting professors are made welcome and where seminars are held is located on the first floor in the Libbey Library.

Each year the workroom group elects its own officers. Management of the workroom activities and publication of *The Monadnock*, which has kept Clark Geography alumni in their many and widespread occupations informed for over thirty years, is the responsibility of the workroom officers.

The professional magazine, *Economic Geography*, is edited by a staff member. Launched at Clark University over a quarter of a century ago, it is the only magazine published in English that specializes in the economic phases of geography.

An outstanding feature of the Graduate School of Geography is the field camp of three weeks' duration at the beginning of the fall term. All resident prospective candidates for graduate degrees in geography are expected to attend the field camp each autumn. The field program includes studies in physiography, land utilization, urban geography and weather, with special training in mapping and other field techniques. Following the return to the campus, about ten days are allowed for the completion of field reports.

Formal course work begins on the second Monday after the close of the field camp.

Formal course work in geography ends about May 1st, leaving students free to read and to coordinate their work prior to the examination period.

The Alpha Sigma Chapter of Gamma Theta Upsilon, national geography fraternity, provides professional and social affiliations between graduate and undergraduate geography majors.

SPECIALIZATION

There are certain basic courses that everyone takes, particularly prospective candidates for the master's degree. However, with the increasing complexity of world problems it has become impossible for anyone to be proficient in all phases of geography. Realizing this, candidates for the doctor's degree are encouraged to specialize. The selection of the specialty depends upon the interests of the student, his choice of courses, and the topic for his dissertation.

STUDENTS' FEES

All geography students in residence must pay, in addition to the general university fees, the camp fee, the workroom fee, and the classroom-materials fee.

The camp fee, determined on a cost basis, varies between \$50 and \$80, payable to the camp director on or before the first day of camp. The camp fee covers in addition to tuition, board and lodging, transportation, maps, drafting supplies, and the use of meteorological instruments and other equipment for the three weeks' period.

The workroom fee, \$5 a semester, is payable to the department November first and March first. It helps to maintain the geography workroom and equipment used by graduate students—alcove desks, files of maps, card catalogue, adding machine, darkroom facilities, drafting tables, and instruments.

The classroom fee, \$5 a semester, is payable to the department November first and March first. It is for mimeographing and for the maintenance, in part, of the classroom wall maps and other equipment.

Departments and Courses

Interdepartmental Majors

General Education

Biology

Business Administration

Chemistry

Classics

Economics and Sociology

Education

English

Fine Arts and Music

Freshman Orientation

Geography

Geology

German

History, Government, and International Relations

Mathematics

Philosophy

Physics

Psychology

Romance Languages

Russian

Departments and Courses

Departments, important subdivisions of departments and certain interdepartmental groups of courses are listed in the following pages. In general, each entry includes a departmental announcement followed by a list of courses which are offered by the department.

Interdepartmental majors and General Education are listed first.

Departments and their subdivisions follow the first two entries in alphabetical order.

Departmental announcements contain important general information, as well as regulations concerning graduate work in the department and statements of the requirements for undergraduate majors.

Courses are, in general, arranged in sequence under each heading so as to progress from the elementary to the advanced. Notice is given in all cases where a department plans to alter the content or to omit a course. If a course is not currently given but will be offered at a later date this fact is stated.

The unit of instruction for undergraduates is a "course." A course normally meets for classroom or laboratory exercises three or four times weekly throughout the regular academic year (September to June) and constitutes one-fifth of the normal program for an undergraduate.

Each unit of undergraduate instruction as listed below yields credit for one half-course in each semester unless its value as a fractional course or a multiple course is indicated.

Both semesters of an "indivisible course" must be satisfactorily completed before any credit is given for the course. Unless an explicit statement to the contrary appears in the course description, successful completion of the first semester is a prerequisite for entering the second semester of an indivisible course.

Advanced courses, not primarily for undergraduates, are announced with a statement of the number of meetings per week. Courses primarily for graduate students yield full half-course credit in each semester without regard to the number of class meetings.

With the consent of the instructor, a course may be entered at the beginning of either semester.

The fields in which instruction is offered in the colleges are classified for administrative purposes in four "groups" as follows:

GROUP A (Science and Mathematics). Biology, botany, chemistry, experimental psychology, geology, mathematics, physics, and physiology.

GROUP B (Social Sciences). Economics, education, geography, government, history, international relations, philosophy, psychology, and sociology.

GROUP C (Language and Literature). Greek, Latin, English, French, German, Russian, Spanish, and an interdepartmental course in language and literature.

GROUP D (Fine Arts). Art and Music.

Courses are classified under three headings as follows:

1. PRIMARILY FOR UNDERGRADUATES, designated by numbers beginning with the figure "1."
2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS, designated by numbers beginning with the figure "2."
3. PRIMARILY FOR GRADUATE STUDENTS, designated by numbers beginning with the figure "3."

Interdepartmental Majors

To provide undergraduate "majors" in certain fields which are intrinsically worthwhile culturally or professionally but which cross departmental boundaries, the Faculty has authorized a group of "interdepartmental majors." These permit a greater breadth of choice than the strictly departmental programs but preserve the unity of content and purpose which is inherent in the concept of a major.

An interdepartmental major includes eight or more required courses.

At present two programs are offered under this plan. These are:

I. INTERNATIONAL RELATIONS

Freshman and Sophomore Years

General Educ. 14	Europe and the United States since 1500
Economics 11	Principles of Economics
Geography 10	Principles of Geography

Junior and Senior Years

Government 24	International Relations
Government 240	Seminar in International Relations
Government 241	International Law and Organization
Geography 201	Political Geography
Economics 207	International Economics
Economics	One-half course to be selected

Instructor in charge: Associate Professor Hayden.

II. AMERICAN CIVILIZATION

Freshman Year

General Educ. 14	Europe and the United States since 1500
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Sophomore Year

At least two of the following courses:

Government 15	Introduction to Government
Economics 11	Principles of Economics
Sociology 11	Principles of Sociology

Junior and Senior Years

History 230	Social and Intellectual History of the United States
English 111	A Survey of American Literature
History 23	Senior Conference in American Civilization

Two courses chosen from the following list:

Sociology 12a	Cultural Anthropology
Philosophy 12	History of Philosophy
History 232	United States Constitutional History and Law
History 234a	American Diplomatic History
History 235b	The United States in the Twentieth Century
Government 251a	American Political Parties
Sociology 12b	Race and Nationality
Sociology 25	Social Institutions

Alternative courses may be chosen with the approval of the instructor in charge of the program.

Instructor in charge: Associate Professor Campbell.

General Education

Courses in General Education are distinguished from courses which are listed in departmental announcements by viewpoint and tone rather than by content. They aim to develop an understanding of the basic unity of knowledge and thought; to offer the student an opportunity to obtain a core of information and of ideas which will be possessed in common with many of his contemporaries and to stimulate intelligent and critical interest in fields of culture where he has no expectation of attaining professional competence. General Education courses are thus a valuable supplement to pre-professional or pre-vocational education. They may be advantageously used to fulfil the distribution requirements in the natural sciences, the social sciences and language and literature. They are outside the sequence of courses in a student's "major" or "field of special interest" and are essentially without specific prerequisites.

The following courses are classified for administrative purposes in Group A or Group B or Group C. They may be used to meet college requirements wherever a particular Group is specified in the "Freshman Programs" or in the "Requirements for a Bachelor's Degree."

The offerings in General Education are under the supervision of a committee which reports to the Academic Council. The present committee consists of Mr. Bumer, chairman, Mr. Nunnemacher and Mr. Reid.

Courses in General Education

General Education 10. An Introduction to Physical Science. This course covers fundamental and outstanding developments of both classical and modern physics and includes selected topics from chemistry and astronomy. The methods and procedures of science as exemplified by physics are emphasized, and considerable attention is given to historical background and the effect of science on man's thought and life. The laboratory periods are devoted to demonstration, discussion, criticism, and evaluation and to a series of selected experiments which are carried out by the students. No attempt is made to develop special competence in laboratory techniques.

Open to freshmen. Primarily for non-science majors. Classified as a Group A course.

Through the year. M. W. F., 10; Tu., 2.

MR. ROOPE

General Education 14. Europe and the United States Since 1500. A survey of political, economic and intellectual trends since the Renaissance, designed to promote an understanding of the origin and development of the problems of the modern world.

The first semester treats the sixteenth, seventeenth and eighteenth centuries; the second semester, the nineteenth and twentieth centuries.

A class fee of one dollar for each member of the class is charged for supplies and duplicate library copies of books.

Open to freshmen. Classified as a Group B course.

Through the year. Tu. Th., 9; F., 1.

First semester: MR. LEE

Assisted by MR. MILLER

Second semester: MR. LEE and MR. BASS

Assisted by MR. MILLER

General Education 17. Great English and American Writers. The aim of this course is not to present a survey of English and American literature, but to study in some detail a limited number of outstanding works of English and American literature—usually six or seven each semester. These works are chosen not only because they possess literary merit but also because they embody significant concepts or issues; and the relevance of the works both to the past and to the present is explored and evaluated.

Four members of the English Department share in the teaching of the course, each man being responsible for one semester; each instructor focusses on one basic idea or issue, so that the student

will be able to examine this concept in some detail, trace its growth and development in six or seven writers, and make meaningful and constructive comparisons and contrasts.

The course is set up in two forms, each form being offered in alternate years:

Form A

The Comic Spirit

First Semester

MR. CARTER

The Concept of Individualism in 19th
and 20th Century English and American
Literature

Second Semester

MR. ANDERSON

Form B

Shapers of American Culture

First Semester

MR. BEARD

The Concept of the Hero

Second Semester

MR. LETENDRE

Any semester of this course meets requirement for a third semester of English in addition to English 11. Open to sophomores, juniors, and seniors.

Divisible course. Classified as a Group C course.

Form B offered 1956-57.

Form A to be offered 1957-58.

General Education 18. Literature and the Nature of Man. This course is designed to serve the general student by providing him with an opportunity to investigate ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representative of the cultures of which they are products.

The course is planned not only to introduce the student to a body of knowledge and experience held in common by educated men and women in our society, but also to help him to clarify his thinking concerning certain basic problems and to develop attitudes that are both humane and creative.

The subject matter undertaken includes Sophocles' *Oedipus the King*, the *Book of Job*, the *Inferno* from Dante's *Divine Comedy*, Shakespeare's *King Lear*, Milton's *Paradise Lost*, Molière's *Misanthrope*, Goethe's *Faust*, Part I, and selected poems of T. S. Eliot. All non-English works are read in translation.

Meets the requirement for a third semester of English in addition

to English 11, but not the requirement in Fine Arts. Classified as a Group C course.

Open to sophomores, juniors, and seniors with the consent of the instructors.

Divisible course. Successful completion of first semester is normally required for admission to second semester.

Through the year. M. W. F., 11.

First semester

MR. ANDERSON

Second semester

MR. KING

General Education 110. Fundamental Concepts of Mathematics. The subject matter of this course is exposed in terms comprehensible to students with no formal training in mathematics at the college level. It is hoped that the course will show the student how the abstract and general ideas of mathematics have implications for other fields of learning.

Indivisible course. Open to juniors and seniors only. Classified as a Group A course.

Through the year. M. W. F., 11.

MR. BUMER

Not to be offered 1957-58.

General Education 143. The Theater in Western Civilization. An analysis of the theater as an art form as it is developed by specific cultural periods of the civilization of the West.

Open to upperclassmen with the consent of the instructor.

This course does not meet the requirement for a third semester of English, nor the requirement in Fine Arts. Classified as a Group C course.

Divisible course. Either semester may be elected separately.

Through the year.

MR. EDWARDS

Not to be offered 1957-58.

American Civilization

An "interdepartmental major" in the field of American Civilization is offered to candidates for the degree of Bachelor of Arts. The program required for the completion of this major is fully outlined under the heading *Interdepartmental Majors*.

Department of Biology

PROFESSOR POTTER, PROFESSOR NUNNEMACHER,
ASSISTANT PROFESSOR REYNOLDS, ASSISTANT PROFESSOR LOOSLI,
RESEARCH ASSOCIATE GATES

The biological laboratories are well equipped for the courses offered and contain special equipment for advanced investigations. Funds are available annually for the purchase and building of apparatus which may be required. The University Library contains complete files of the more important periodicals and reference works. The department maintains an extensive herbarium.

UNDERGRADUATE WORK

Biology 11 presents a comprehensive view which is prerequisite to all other courses in the department, except Biology 19a.

An undergraduate majoring in biology must complete Biology 11 and three advanced courses in biology, Chemistry 11, Physics 11, Mathematics 11, and at least one additional course in chemistry, physics or geology. Mathematics 11 does not count towards the fulfillment of the major requirements.

A candidate for honors in biology must take Biology 11, 12, 14 and 240.

THE PRE-MEDICAL PROGRAM

Clark University is justly proud of its pre-medical training program. Not only do our better students have little difficulty in entering the best medical schools, but they usually rank in the upper half of their medical school classes and become respected and outstanding physicians.

The student entering upon the pre-medical program must be prepared to compete with other college students of above-average ability; he must be of good health and capable of sustained hard work; he must like and get along well with all kinds of people and he must have a real desire to help the sick and advance the science of medicine. The pre-medical student must be prepared to undertake a program of intensive study which usually takes eight years before the medical degree can be obtained. During this time

the large amount of class and laboratory work reduces considerably the opportunities for earning money through outside work.

While the requirements for the Bachelor of Arts degree assure each graduate familiarity with several fields of learning, the pre-medical student should take as many non-science courses as possible to round out his general education, because medical school programs leave no time for courses outside of their technical field. Courses in psychology and human relations will be of particular benefit.

The field of medicine is open equally to men and women.

The following programs are recommended for pre-medical students with a major in biology. Program A places the emphasis on biology; Program B places the emphasis on chemistry.

PROGRAM A

First Year

English
Foreign Language
Mathematics
General Biology
Group B (one course)

Second Year

Biology 12
General Chemistry
Foreign Language
Group B (one course)
 $\frac{1}{2}$ course in English and
 $\frac{1}{2}$ course in Fine Arts

Third Year

Biology (two advanced courses)
Chemistry 13
Physics 11
Two electives

Fourth Year

Biology 240
Chemistry 17 and 170
Three electives

PROGRAM B

First Year

English
Foreign Language
Mathematics
General Chemistry
Group B (one course)

Second Year

Chemistry 13
General Biology
Foreign Language
Mathematics 12

Third Year

Chemistry 17 and 170
Biology 12
Physics 11
Group B (one course)
One elective

Fourth Year

Chemistry 19
Biology (two advanced courses)
 $\frac{1}{2}$ course in English and
 $\frac{1}{2}$ course in Fine Arts
One elective

GRADUATE WORK

Graduate instruction has been offered by the Biology Department since the founding of the University in 1887. At present a small number of students may work towards the Master of Arts Degree in specialized phases of Botany, Zoology, Physiology and Bacteriology. The department stresses a firm foundation in general biology and allied fields and the development of the critical judgment and work habits so necessary in teaching and independent research.

Admission as a candidate for an advanced degree in the department presupposes adequate preparation in the basic sciences, an over-all undergraduate academic record of B or better and satisfactory standing in the graduate record examination. The program usually requires two full academic years and involves the completion of five full graduate courses and an acceptable dissertation.

Graduate Assistantships and Scholarships are available in limited numbers.

Courses in Biology

During the academic year 1956-57 the following courses were given: 11, 12, 14, 18a, 130, 219b, 220a, 221b, 224b, 231a, 231b, 240, 241a, 246b, 260, 300, 320, 340, 350, 360.

1. PRIMARILY FOR UNDERGRADUATES

11. *General Biology*. An introduction to the fundamental principles and problems of biology.

Divisible course upon approval by the department.

Open to freshmen.

Through the year. M. W. F., 11; M., 2.

MR. POTTER AND MR. NUNNEMACHER

12. *Comparative Anatomy*. A study of the morphology of the vertebrates from a comparative standpoint which traces the evolution of animals from fish to mammals.

Lectures and laboratory work.

Through the year. M. W., 8; Tu. F., 2.

MR. NUNNEMACHER

14. *Botany*. First semester, morphology, and taxonomy of the lower plants. Special emphasis is given to the algae and fungi.

Second semester, systematic botany of the higher plants with

special emphasis on our local flora. A collection of one hundred plants is required, also a spring program of laboratory work in the field of at least three days' duration.

Either semester of the course may be elected separately.

Prerequisite: Biology 11, first semester.

Through the year. Tu. Th., 10; W., 2.

MR. POTTER

17. *General Ecology*. An introductory study of the distribution of plants and animals, their inter-relationships and adaptations to such a wide variety of environments as the seashore, sand dunes, woodlands, and ponds. Field trips to Mt. Monadnock and other areas of ecological interest will be taken during the laboratory period or on Saturday.

Half course. Three lectures, one laboratory per week.

MR. POTTER AND MR. NUNNEMACHER

18a. *Genetics*. An introduction to the principles of genetics. Half course. First semester. M. W. F., 9.

MR. POTTER

19a. *Human Anatomy and Physiology*. An introductory semester course. Does not require Biology 11 as a prerequisite but requires Biology 11 to be counted towards the Group A requirement. May not be counted toward the fulfillment of the requirements for a major in biology. Three lectures per week.

MR. NUNNEMACHER

130. *Bacteriology*. An introduction to the study of bacteriology. Through the year. Divisible, but 130a is a prerequisite for other courses in bacteriology.

W. F., 11; two laboratory periods.

MR. REYNOLDS

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

201. *Advanced Systematic Botany*. Through the year. Three laboratory periods and one lecture per week. Either semester may be taken separately.

MR. POTTER

202. *Economic Botany*.

MR. POTTER

213. *Seminar in General Biology*.

STAFF

215. *Invertebrate Zoology*.

Half course.

MR. REYNOLDS

219b. *Entomology*. Fundamentals of insect life.

Three lectures and one laboratory period per week.

Half course. Second semester.

MR. POTTER

220a. *Histology*. A comprehensive course dealing with tissue structure. Emphasis is placed on the study of mammalian tissues. Two lectures and two laboratory periods per week.

Half course. First semester. Tu. Th., 10. MR. NUNNEMACHER

221b. *Embryology*. A consideration of the fundamentals of embryology. Two lectures and two laboratory periods per week.

Half course. Second semester. Tu. Th., 10. MR. NUNNEMACHER

223b. *Parasitology*. An introduction to the parasitic mode of life of the protozoa, helminthes, and arthropoda and their relation to mankind.

Half course. Second semester.

STAFF

224b. *Neuro-anatomy*.

Three lectures per week.

MR. NUNNEMACHER

231. *Advanced Bacteriology*. Open to the students who satisfy the instructor as to their preparation. The first semester deals with the cytology and physiology of the Eubacteria and certain higher forms. The second semester covers bacteriological and serological procedures used in the study of pathogenic bacteria.

Year course, divisible.

Two lectures and two laboratories per week. MR. REYNOLDS

240. *General Physiology*. Open to students who satisfy the instructor as to their preparation. The principle types of functioning characteristic of living organisms are considered in the light of their physio-chemical determinants.

Through the year. Tu. Th., 10; and two laboratory periods per week.

MR. LOOSLI

241. *Endocrinology*. A study of the ductless glands and their relation to behavior.

Half course.

MR. LOOSLI

244. *Biochemistry*.

Half course.

STAFF

246b. *Physiological Genetics*. Deals with the mechanisms for the genetic control of physiological processes.

Half course.

MR. LOOSLI

260. *Special Problems*. Advanced semi-independent study of an approved topic under the direction of a member of the staff.

Hours and credit to be arranged.

STAFF OF THE DEPARTMENT

261. *Microtechnique*.

Through the year.

MR. NUNNEMACHER AND MR. POTTER

3. PRIMARILY FOR GRADUATE STUDENTS

300. *Readings and Research in Botany.*

Credit to be arranged.

MR. POTTER

301b. *Plant Morphology.*

Credit to be arranged.

MR. POTTER

320. *Readings and Research in Zoology.*

Credit to be arranged.

MR. NUNNEMACHER

330. *Readings and Research in Bacteriology.*

Credit to be arranged.

MR. REYNOLDS

340. *Readings and Research in Physiology.*

Credit to be arranged.

MR. LOOSLI

350. *Advanced Studies in Biology. Seminar.*

Tues. 4-6.

STAFF OF THE DEPARTMENT

360. *Thesis.*

Credit to be arranged.

STAFF OF THE DEPARTMENT

Business Administration

PROFESSOR MELDER, ASSOCIATE PROFESSOR HARGEST, ASSOCIATE PROFESSOR HUND, ASSISTANT PROFESSOR BALKO, ASSISTANT PROFESSOR NORDSTROM, LECTURER BREEN

A description of the program in business administration and a statement of the requirements for the degree of Bachelor of Science in Business Administration are found under the special heading "Division of Business Administration." Requirements for admission and the freshman program are found under the general heading "The Undergraduate Colleges."

The courses in business administration and related subjects which are included in the program for the degree of Bachelor of Science in Business Administration are listed alphabetically in the following pages under the headings: Accounting, Economics, English and Public Speaking, Finance, Government, Management, Marketing, Mathematics and Statistics, and Science.

Courses in Business Administration

Courses in *Business Administration* are classified as follows:

<i>Course number</i>	<i>Classification</i>	<i>Course number</i>	<i>Classification</i>
10a	Management	127	Accounting
10b	Marketing	128	Accounting
13a	Management	129a	Accounting
16	Statistics	181a	Management
17a	English	182b	Management
18a	Finance	183	Management
19b	Finance	20	Management
109b	Marketing	203	Marketing
112b	Management	209b	Management
115a	Marketing	227b	Accounting
117	Accounting	230a	Marketing
124b	Marketing	237	Accounting
125b	Marketing	250	Management

Students should note that the following courses may *not* be counted for credit toward the degree of Bachelor of Arts: B.A. 13a, 17, 109b, 115a, 124b, 125b, 128, 129a, 181a, 182b, 227b, 237.

ACCOUNTING

Business Administration 117. Principles of Accounting. The organization and use of financial records, with emphasis on their interpretation as well as on the techniques of procedure.

Indivisible course.

Required of freshmen in the Business Administration program, and a prerequisite to all other courses in accounting.

Through the year. Tu. Th., 8; Tu. or Th., 2. MR. HARGEST

Business Administration 127. Intermediate Accounting. A study of generally accepted accounting principles and procedures and their application to asset, liability and proprietorship accounts. The analysis of financial statements, including statements from incomplete data and the statement of application of funds. Emphasis is placed upon problem analysis and solution.

This course may be entered at beginning of the second semester, but credit will not be given until both semesters have been completed.

Indivisible course.

Through the year. M. W. F., 10. MR. HARGEST

Business Administration 128a. Elementary Cost Accounting. A study of the basic principles of cost accounting and their application to the job order cost system. Especial consideration is given to the accounting for material, labor and manufacturing expenses and to the preparation of financial statements.

Half course. To be offered first semester 1957-58.

Offered in alternate years. MR. HARGEST

Business Administration 128b. Advanced Cost Accounting. A study of the principles and procedures used in process, estimated and standard cost accounting systems. Consideration is given to the accounting for by-products, joint products and methods of accounting for work in process inventories. The preparation of financial statements and cost reports for managerial control is emphasized.

Half course. To be offered second semester 1957-58.

Offered in alternate years. MR. HARGEST

Business Administration 129a. Federal Tax Accounting. A basic course in the fundamentals of federal income and social security taxes with major emphasis upon the preparation of returns.

Half course.

Offered irregularly.

Business Administration 227b. Auditing. After an analysis of the purpose and scope of the several classes of audits, the course deals with (1) professional ethics (2) auditing standards (3) internal control systems (4) audit procedures applicable to asset, liability and proprietorship accounts, and (5) the use of worksheets and the preparation of statements and reports.

Half course.

Business Administration 237a. Branches, Consolidations, Mergers and Bankruptcy Accounting. The principles and problems encountered in home office and branch accounting; parent and subsidiary accounting; major-minor and reciprocal holding company relationships; financial and operating statements of consolidated companies; accounting for "sick business"; equity receiverships, statement of affairs; bankruptcy; the statement of realization and liquidation.

Half course. First semester.

Offered in alternate years. Not to be offered in 1957-58.

MR. HARGEST

Business Administration 237b. Governmental, Institutional and Estate Accounting. The principles and problems encountered in accounting for the budget, revenues, appropriations and expenditures for the several funds used by governmental units and institutions. Accounts of the executor, administrator or trustee of an estate, and the related charge and discharge of statements.

Offered in alternate years. Not to be offered in 1957-58.

ECONOMICS

See also announcement of the Department of Economics and Sociology.

Economics 11. Principles of Economics. Required for the degree of Bachelor of Science in Business Administration.

Economics 13. Money and Banking. First half required for the degree of Bachelor of Science in Business Administration.

Economics 15a. Public Finance

Economics 140b. Consumer Economics

Economics 21b. National Income Analysis

Economics 22. Labor Economics and Labor Problems

Economics 24b. History of Economic Doctrine

- Economics 25b. Problems in Public Finance*
Economics 26. Industrial Organization and Governmental Control
Economics 29a. Economics of Transportation
Economics 205a. Intermediate Economic Theory
Economics 207. International Economics
Economics 211b. Comparative Economic Systems
Economics 231b. Economic History of the United States

ENGLISH AND PUBLIC SPEAKING

English 11. Composition and Literature. Required in the freshman year of all candidates for the degree of Bachelor of Science in Business Administration.

English 17a. Public Speaking. A course in the fundamentals of public speaking the more common speech situations such as speech of introduction, address of welcome, expository and impromptu speeches; problems in human relations; voice tests, vocabulary drill.

Required for the degree of Bachelor of Science in Business Administration.

Half course. To be offered first semester. M. W. F., 9.

MR. ILLINGWORTH

Business Administration 17b. Public Speaking. Parliamentary procedure, open forum, panel discussion, committee meetings, reports, extemporaneous speaking.

Prerequisite: Business Administration 17a.

Half course. To be offered second semester. M. W. F., 9.

MR. ILLINGWORTH

FINANCE

Business Administration 18a. Corporation Finance. A course in the financial structure of modern industry with emphasis on the nature of the business corporation, its financial practices, types of securities, capital structure, financial reorganization, and the problems of internal financial control.

Required for the degree of Bachelor of Science in Business Administration.

Half course. To be offered first semester.

MR. HUND

Business Administration 19b. Introduction to Investments. Principles underlying investment analysis and policy; salient characteristics of governmental and corporate securities; policies of investment companies and investing institutions, relation of investment policy to money markets and business fluctuations; security price-making forces; construction of personal investment program and exchange operation.

Half course to be offered second semester.

MR. HUND

GOVERNMENT

See also announcement of the Department of History, Government and International Relations.

Government 15. Introduction to Government. Required for the degree of Bachelor of Science in Business Administration.

Through the year.

MR. COHEN

MANAGEMENT

Business Administration 10a. Introduction to Business. A survey of the fields of business and their inter-relationships.

Half course. To be offered first semester. M. W. F., 9.

MR. LEVENSON

Business Administration 13a. Production Control.

Half course. To be offered first semester.

MR. LEVENSON

Business Administration 112b. Introduction to Personnel Management. A survey of the policies, practices and theory underlying the management of manpower in Industry. Representative topics studies are employee selection, training, promotion and transfer, wage payment and morale.

Half course. To be offered second semester.

MR. LEVENSON

Business Administration 181a. Industrial Management. A study of the techniques of the executive control of manufacturing operations with special reference to such fields as specialization of labor, simplification and diversification of products, expansion, control of factors of production, and internal organization. The case method is used to a large degree.

Half course. To be offered first semester. M. W. F., 10.

MR. LEVENSON

Business Administration 182b. Principles of Supervision.

Half course. To be offered second semester. M. W. F., 9.

MR. LEVENSON

Business Administration 183. Management-Labor Relations. The subject matter of the course is management-employee relationships with special reference to union and management bargaining. Opportunity for development of perspective and judgment as regards problems of management in shop industrial situations and under the law of labor relations is provided. Discussion and case methods are employed.

Through the year.

MR. MELDER

Business Administration 20. Business Law. A study of the legal basis of business and the principles of statutory and common law as they affect business relationships; covering such subjects as contracts, property, sales, negotiable instruments and agency.

Indivisible course.

Required for the degree of Bachelor of Science in Business Administration.

Through the year. M. W. F., 8.

MR. BREEN

Business Administration 250. Analysis of Business Problems. A course in the analysis of specific problems of administration and policy making. The course is designed to integrate the principles covered in more specialized courses in Business Administration in order that the student may acquire an appreciation of the broad business picture, while developing his ability to view business and economic problems from an over-all standpoint.

Required of seniors in the Business Administration program.

Indivisible course.

Through the year. M. W., 2-3:15.

MR. BALKO

Business Administration 10b. Principles of Marketing. An introductory study of those activities and practices of business institutions concerned with the flow of tangible commodities between producers and consumers; efficiency of the system, social implications and public control.

Required of freshmen in the Business Administration program.

Half course. To be offered second semester 1957-58. M. W. F., 9.

MR. BALKO

Business Administration 109b. Sales Management. A course designed to give the student experience in analyzing sales problems, arriving at practical solutions, and defending these solutions. Sales administration, operation, control, promotion, and policies are studied during the course.

Offered in alternate years. Not to be offered 1957-58. MR. BALKO

Business Administration 115a. Advertising. An introduction to the principles and practices of advertising. The emphasis is on the use of advertising as a tool of marketing. Topics studied include the economic functions of advertising, advertising research, media selection, advertising organizations, and testing.

Half course. To be offered first semester. M. W. F., 10.

MR. BALKO

Business Administration 124b. Industrial Marketing. A study of the methods of marketing producer goods. Products, market, distribution and sales promotion problems are discussed.

Offered irregularly.

MR. BALKO

Business Administration 125b. Retailing Principles. A survey of the major phases of retailing including discussions of the retailer in our economy, the store and its organizations, aspects of buying and selling, operating activities and personnel, and retail control.

Offered in alternate years. Not to be offered 1957-58. MR. BALKO

Business Administration 203a. Marketing Research. A study of the types of problems faced by business executives in marketing and the ways in which the methods of scientific business research can be utilized for their solution.

Prerequisite, a course in statistics.

Offered in alternate years. Not to be offered 1957-58. MR. BALKO

Business Administration 203b. Sales Forecasting. Application of statistical procedure to the problems of predicting market demand and sales of the individual firm.

Prerequisite, a course in statistics to include time series and correlation.

Half course. To be offered second semester. M. W. F., 10.

MR. BALKO

Business Administration 230a. Marketing Policies. An advanced course designed to acquaint would-be practitioners of marketing with an analytical approach to solving some problems in product planning, channels of distribution, brands, pricing and advertising. The case method will be used with emphasis on group discussion.

Half course. To be offered first semester. M. W. F., 9.

MR. BALKO

MATHEMATICS AND STATISTICS

Mathematics 11. Freshman Mathematics. Required in the freshman year of all candidates for the degree of Bachelor of Science in Business Administration.

Through the year. Various hours. MR. STUBBE, MR. GORENSTEIN

Business Administration 16a. Business Statistics I. A basic survey course in statistical procedures and techniques dealing with the collection and presentation of data; measures of central tendency, dispersion and skewness; time series; index numbers; and correlation. While the data used for demonstration purposes are drawn from business sources, this course and the one which follows are sufficiently general to be of interest to any student of the social sciences who desires a basic course in statistical measures and methods.

Required of all candidates for the degree of Bachelor of Science in Business Administration.

Half course. To be offered first semester. T., Th., 9; Tu. 2-4.

MR. HARGEST

Business Administration 16b. Business Statistics II. This course carries on the work of Business Statistics I, continuing the study of correlation and giving intensive treatment to other topics of statistical inference such as large and small sample theory, differences between sample means, elementary probability theory, and a study of the properties of the normal distribution as well as certain other distributions.

Prerequisite, B.A. 16a.

Required of all candidates for the degree of Bachelor of Science in Business Administration.

Half course. To be offered second semester. Tu., Th., 9; Tu., 2-4.

MR. HARGEST

SCIENCE

Candidates for the degree of Bachelor of Science in Business Administration in their sophomore year must elect one of the following laboratory sciences. (See appropriate sections of the catalogue for schedule of courses.)

Biology 11. General Biology.

Chemistry 11. General Chemistry.

General Education 10. An Introduction to Physical Science.

Geology 12. General Geology.

Physics 11. General Physics.

Department of Chemistry

PROFESSOR BULLOCK, PROFESSOR MARTELL, PROFESSOR KEGELES,
ASSOCIATE PROFESSOR SUGIHARA, PROFESSOR AFFILIATE
DORFMAN, VISITING ASSISTANT PROFESSOR UNGAR

Chemistry courses fall into two groups:

1. Those primarily for undergraduates. These provide a foundation for professional work in chemistry or medicine, and are suitable for students desiring some knowledge of the subject as part of their general education.
2. Those primarily for graduate students.

UNDERGRADUATE WORK

Students who intend to become professional chemists or to study for an advanced degree in chemistry should major in chemistry and take at least two years' work in physics.

They should normally conform closely to the schedule given below. However, an outstanding student may elect an accelerated program leading to advanced work in the junior and senior years.

REPRESENTATIVE FOUR YEAR CURRICULUM IN CHEMISTRY

First Year

English 11
German 11 (or French 11)
Chemistry 11
Mathematics 11
Elective, Group B

Second Year

Chemistry 13
Physics 11
Mathematics 12
German 12 (or French 12)
Elective, Groups B, C, or D

Third Year

Chemistry 17 and 170
German 13 (or French 14)
Two of the following:
Mathematics 13, Physics 15,
Physics 16, Physics 18, Physics
124, French 11 or German 11,
Geology, Biochemistry, Biology,
Groups B, C, or D.

Fourth Year

Chemistry 19
Two full courses from the following
list:
Chemistry 112b or 116, Chemis-
try 212b, Chemistry 215, Physics
15, Physics 17, Physics 22,
Physics 23, Biology, Mathematics,
French 12 or German 12.
Electives, Group B, C, or D.

A student who satisfies the Department of Chemistry as to outstanding qualifications may elect Chemistry 13, Organic Chemistry, in place of Chemistry 11 in the freshman year. Chemistry 19 is required of all chemistry majors and is essential for work in physiology. Mathematics through Mathematics 13 is recommended as preparation for Chemistry 19 and for graduate work in chemistry. The same amount of mathematics is strongly recommended for all who elect chemistry as a major, and for all who expect to become professional chemists.

For professional work in chemistry, at least one year of graduate study is highly desirable.

Students who consider the possibility of later graduate study in chemistry are advised to secure a reading knowledge of German and either French or Russian in order to anticipate the requirements for higher degrees in most graduate schools.

Students who intend to enter the field of secondary education should acquaint themselves with the requirements in "education" of state and local licensing boards and prepare to meet these requirements. This may necessitate the omission of certain elective courses scheduled for the third and fourth years.

In most colleges, premedical students major in chemistry. Program B, outlined in the announcement of the Department of Biology, lists the courses most suited for preparation for all "Class A" medical schools. The special advantage of this program is the inclusion of Chemistry 19 (Physical Chemistry), necessary preparation for physiology.

Attention is called to laboratory fees and breakage deposits listed under the general heading "The Undergraduate Colleges" and the special heading "Fees and Expenses."

GRADUATE WORK

The Department of Chemistry offers advanced courses in the fundamental principles of physical, organic, inorganic, radiochemistry and analytical chemistry, and these are supplemented by specialized courses and research work in physical and organic chemistry and radiochemistry.

The graduate program is designed to lead to the degrees of Master of Arts and Doctor of Philosophy. Besides a successful completion of the fundamental courses offered in the graduate

school, candidates for both degrees must show facility in conducting a laboratory investigation and a command of the subject which is chosen for the thesis or dissertation.

GRADUATE FELLOWSHIPS AND SCHOLARSHIPS

Scholarships, when granted, cover tuition, laboratory fees, and supplies. Teaching assistantships are available which require not more than six hours per week of the student's time, permitting full-time work in the degree program. Other assistance is in the form of predoctoral fellowships sponsored by the university or by various research grants.

Many students are awarded summer fellowships, enabling them to pursue their research work more actively than is possible during the regular school year.

Assistantships and fellowships are allotted individually on the basis of the student's record. The maximum rate, including summer work, is \$2000 per year in addition to remission of tuition and laboratory fees, for an 11-month program.

Sponsors of fellowships and research programs include Clark University, National Science Foundation, Research Corporation, National Institutes of Health, Dow Chemical Company, Atomic Energy Commission, Eli Lilly and Co., Carbide and Carbon Chemical Company, Esso Research Foundation and others.

TRAINING PROGRAM FOR STEROID BIOCHEMISTRY

Recognizing the increasing importance of the steroid hormones in many fields of medical research, the National Cancer Institute of the National Institutes of Health, United States Public Health Service, has established grants for specialized training in steroid biochemistry at Clark University, in cooperation with the Worcester Foundation for Experimental Biology.

The training program will consist of both intensive training in laboratory procedures and in lectures covering the theoretical and practical aspects of steroid technology. Two groups of candidates will be selected each year for training awards. Stipends of \$1500 will be paid to ten individuals possessing a Bachelor's or Master's degree for a six month's period of training. Stipends of \$5000 will be paid to five individuals possessing an M.D. or Ph.D. degree for a one year period. The latter advanced group will have the

opportunity to engage in basic research in the laboratory of an established investigator at the Worcester Foundation for Experimental Biology.

The lecture series of the training program will consist of five one-hour lectures per week for a sixteen week period starting in October. The lectures, to be given by staff members of Clark University, the Worcester Foundation, and selected guest lecturers, will include the fields of organic chemistry, physical chemistry (instrumentation) and steroid biochemistry. Opportunity to attend the lecture program will be offered to selected individuals by permission of the staff.

RESEARCH

The department offers research work in organic, physical-organic, radiochemistry and physical chemistry in the following fields of investigation:

Synthesis and chemical properties of organic sulfur compounds and aromatic amines.

Synthesis of amino acids and other metal-ion complexing agents. Dipole moments of metal chelate compounds.

Thermodynamic properties of metal chelate compounds.

Dissociation constants of weak electrolytes from electromotive force measurements.

Infrared and ultraviolet absorption spectra of metal chelate compounds.

Optical methods for the study of inhomogeneous liquids.

Diffusion of electrolytes, amino acids and peptides in water.

Ultracentrifuge studies of proteins, synthetic high polymers and smaller molecules.

Chromatographic analysis of proteins and their cleavage products.

Radiochemical studies of fission.

Chemical effects of nuclear transformations.

Radiochemical applications to analytical chemistry.

Modern research facilities include:

Superpressure hydrogenation apparatus, double-beam infrared recording spectrophotometer, ultraviolet recording spectrophotometer, precision conductivity bridge, precision capacity bridge for dielectric constants, recording polarograph, heavily shielded anti-

coincidence low-level Geiger counter, scintillation spectrometer, interferometric Gouy diffusion apparatus, continuous recording Rayleigh interferometer, and optical ultracentrifuge.

Much of the equipment was specially designed and assembled in the laboratory. The Department has a student machine shop to handle small work. Excellent machine shop facilities in Worcester have produced large parts for equipment of original design.

COURSE REQUIREMENTS

All graduate students are required to demonstrate an adequate reading knowledge of French and German prior to entrance into candidacy for the Ph.D. degree. Although this requirement may be met as late as the time of completion of M.A. requirements, experience has demonstrated that failure of the student to fulfill these requirements early in the course of graduate studies can act as a serious deterrent to satisfactory progress. It is therefore recommended that entering students prepare themselves for examination in at least one language at the beginning of the first semester of graduate studies.

Students registered for advanced degrees are expected to spend not less than eighteen hours per week in the laboratory. This may include special laboratory work in organic, organic-physical, radio-chemistry, or physical chemistry.

A total of 16 semester courses in chemistry are offered in addition to the seminar, chemical-literature survey, and research. Eight semester courses are offered each year in addition to courses 350 and 380. Courses 310, 311, 320, 322, 330, 331, 340 and 341 are fundamental courses and are required for qualification for the Ph.D. degree.

The graduate program normally consists of six semester courses per year in addition to seminar and research, with the exception of the final year of Ph.D. candidacy, when it is generally expected that the student will be free to devote his major effort toward the completion of his research program. Two of these six courses may be taken in the related fields of mathematics and physics.

All graduate students participate in Chemistry 380 and participation in seminar, Chemistry 350, is required. Tuition is not charged for either courses because neither carries credit. Emphasis is placed on research work from the time of the student's entrance

into the Department. A thesis is required for the master's degree as well as for the doctor's degree.

The length of time required for the master's degree is ordinarily three semesters because eight semester courses are required in addition to research work upon which the thesis is based. For the doctor's degree no time limit can be specified, but normally at least three years beyond the bachelor's degree are required for the completion of the research work.

The preliminary examinations that must be passed in order to be admitted to candidacy for the doctor's degree consist of two oral examinations. One of these is intended to be a literature survey in some area other than the one in which the student is conducting research. The subject is picked by the student.

The other examination is based on an original research problem proposed by the student. No limitations are placed on the area from which the problem can be drawn except that it cannot be a simple extension of the student's own research.

The first preliminary examination must have been passed before November 1 of the student's third semester at the University. For students entering the graduate school with a bachelor's degree the second examination must have been passed before November 1 of their seventh semester. For students holding master's degrees at the time of admission to the Graduate School, the second examination must have been passed not later than November 1 of their fifth semester.

It should be noted that according to university regulations the foreign language requirement, normally in French and German, must be satisfied before the preliminary examination requirement can be satisfied.

Since the length of time necessary to make satisfactory progress in the research is indeterminate, the student may complete the work for the doctor's degree without reference to the academic year. On completion of such work, the student receives a certificate from the department which allows him to take up a position at once, and he then receives the formal diploma at the next commencement.

The requirements for the doctor's degree include a reading knowledge of French and German, preliminary oral examinations, and a dissertation followed by an oral defense when the dissertation is complete.

Courses in Chemistry

During the academic year 1956-57 the following courses were given: 11, 13, 17, 19, 116, 170, 212b, 215, 300, 320, 322, 330, 331, 340, 341, 350, 360, 361, 380 and 390.

During the academic year 1957-58 the following courses will be offered: 11, 13, 17, 19, 112b, 116, 170, 212b, 215, 300, 310, 311, 321, 323, 324, 332, 333, 342, 345, 350, 380 and 390.

1. PRIMARILY FOR UNDERGRADUATES

11. *General Chemistry*. Systematic study of the elements and their principal compounds and the fundamental laws and theories of chemistry. Three lectures and three hours of laboratory work per week.

Prerequisite for all other courses in chemistry.

Divisible only by consent of instructor.

Through the year. M. W. F., 11; Tu., 2-5 or Th., 2-5

MR. MARTELL

13. *Organic Chemistry*. Lectures on the principles of organic chemistry and a laboratory study of the preparation and properties of important organic compounds. Three lectures and three hours of laboratory per week.

Prerequisite: a grade of C— or better in Chemistry 11.

Through the year. M. W. F., 9; T., 2-5.

MR. BULLOCK

17. *Principles of Analytical Chemistry*. Theories and principles of chemistry underlying volumetric and gravimetric analysis as well as more advanced analytical methods. Three lectures per week. Must be taken concurrently with Chemistry 170.

Prerequisites: Chemistry 13, Mathematics 12 (may be taken concurrently), Physics 11.

Through the year. M. W. F., 11.

MR. SUGIHARA

19. *Physical Chemistry*. Principles of physical chemistry including gases, liquids, solutions, crystalline solids, chemical thermodynamics, homogeneous and heterogeneous equilibria, electrolytic conductance and transference, electromotive force, reaction kinetics, colloids.

Required for a major in chemistry.

Three hours of lectures and three hours of laboratory per week.

Prerequisites: Chemistry 17, 170.

Mathematics 13 is strongly recommended.

Through the year. Tu. Th., 10; M., 2; F., 2-5.

MR. KEGELES

112b. *Physico-Chemical Methods*. An advanced laboratory course in physical chemistry. Registration limited.

Open to students who have taken or are taking Chemistry 19.

One lecture and six hours of laboratory work per week.

Half course. Second semester. Tu. Th., 2. MR. KEGELES

116a. *Organic Qualitative Analysis*. Prerequisite: Chemistry 13.

One lecture and six hours of laboratory work per week.

First semester. Tu. Th., 2-5; Th., 1. MR. MARTELL

116b. *Advanced Organic Synthesis*. Prerequisite: Chemistry 13.

One lecture and six hours of laboratory work per week.

Second semester. Tu. Th., 2-5; Th., 1. MR. MARTELL

170. *Analytical Chemistry Laboratory*. Must be taken concurrently with Chemistry 17. Volumetric and gravimetric analysis and an introduction to instrumental and other advanced analytical methods. Two three-hour laboratory periods per week.

Prerequisites: Chemistry 13, Mathematics 12 (may be taken concurrently), Physics 11.

Half course.

Through the year. M. F., 2-5.

MR. SUGIHARA

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

212b. *History of Chemistry*. Outline of historical development of the science, and the relation of chemistry to other sciences at various periods of development. Lectures, collateral reading, reports and thesis.

Open to graduate students and seniors who take or have taken Chemistry 13 and 19 or equivalent courses.

Half course. Second semester. Tu. Th., 11. MR. BULLOCK

215. *Honors Course*. Primarily for candidates for "honors in chemistry." A laboratory research project.

STAFF OF THE DEPARTMENT

All courses listed below are semester courses except 300, 350, and 380, given through the year.

300. *Research*

THE STAFF

310. *Molecular Structure*. Theories of electronic structure and relationship between chemical binding and physical properties of various substances. Dipole moments, magnetic properties, bond energies and stereochemistry of organic and inorganic compounds.

First semester. M. W. F., 9.

MR. MARTELL

311. *Reaction Mechanisms*. Electronic interpretations of chemical reactions, acid-base concepts and solution catalysis, free-radical and ionic mechanisms.

Second semester. M. W. F., 9.

MR. MARTELL

Chemistry 310 and 311 offered together in alternate years.

*320. *Advanced Physical Chemistry*. Selected topics in physical chemistry described in detail: chromatography, electrochemistry, Debye-Hückel theory. Second semester. M. W. F., 10.

MR. KEGELES

321. *Colloid Chemistry*. Osmotic and sedimentation equilibrium. Sedimentation velocity; diffusion.

First semester. To be offered 1957-58.

MR. KEGELES

*322. *Thermodynamics*. Applications of classical thermodynamics to chemical systems.

First semester. M. W. F., 10.

MR. KEGELES

323. *Statistical Mechanics*. Statistical mechanical analogs of thermodynamic functions and their application to chemical systems.

Second semester.

MR. KEGELES

324. *Refractometric Techniques*. Applications of refractometric methods to the study of optically inhomogeneous media. Methodology employed in electrophoresis, ultracentrifugation, diffusion and chromatography.

Second semester.

MR. KEGELES

330. *Advanced Organic Chemistry*. Effects of functional groups on synthesis.

MR. BULLOCK

331. *Organic Chemical Reactions*. Lectures on the fundamental reactions in organic chemistry.

Chemistry 330 and 331 offered together in alternate years.

MR. BULLOCK

332, 333. *Heterocyclic Compounds*.

Chemistry 332 and 333 offered together in alternate years.

Through the year. Th., 10.

MR. BULLOCK

*340. *Quantum Chemistry*. Review of classical concepts and experiments from which quantum mechanics evolved, the old quantum theory, elementary quantum mechanics of simple systems, properties of wave functions, approximation methods for complex systems.

First semester. M. W. F., 9.

MR. SUGIHARA

*341. *Quantum Chemistry and Advanced Inorganic Chemistry*. Applications of quantum mechanics to atomic and molecular spectra, periodic classification of many-electron atoms, chemical and physical properties of atoms and simple ions as functions of electron structure, magnetic properties, kinetic theory and statistics.

Second semester. M. W. F., 9.

MR. SUGIHARA

* Chemistry 320 and 322 and Chemistry 340 and 341 are offered together in alternate years.

342. *Radiochemistry*. Fundamentals of nuclear physics, including nuclear structure, modes of radioactive decay, interaction of nuclear particles with matter. Radiochemical techniques of production, isolation, and identification of radioactive atoms, introduction to techniques of preparation and measurement of radioelements, applications to problems in chemistry and physics.

First semester. W. F., 10.

MR. SUGIHARA

343. *Theories of Analytical Chemistry*. Theories of titrations, indicators, and pH measurement, titration in non-aqueous solvents, equilibrium theory of chromatography, ion-exchange resins, solvent extraction, theories of gravimetric analysis, principles of some instrumental analytical methods.

MR. SUGIHARA

345. *Selected Topics in Advanced Nuclear and Radiochemistry*. Prerequisite: Chemistry 342.

Second semester. W. F., 10.

MR. SUGIHARA

350. *Seminar*. Reports on research work and discussions of recently published work.

GUEST LECTURERS, STAFF AND GRADUATE STUDENTS

360. *Coordination Compounds*. Lectures on the chemical properties of metal complexes, with emphasis on recent developments in the field of metal chelate compounds.

First semester. Time to be arranged.

MR. MARTELL

361. *Principles of Instrumental Analysis*. A study of the principles involved in the use of analytical instruments, including potentiometry, infrared and ultraviolet absorption spectrophotometry, and polarography.

Second semester. Time to be arranged.

MR. MARTELL

380. *Research Conference*. Informal reports of research work being done in the laboratory.

STAFF AND GRADUATE STUDENTS

390. *Special Graduate and Post-Graduate Course in Steroid Biochemistry*. A training program for steroid biochemistry sponsored by the National Cancer Institute, U.S.P.H.S., at Clark University in conjunction with the Worcester Foundation for Experimental Biology, open to qualified personnel with advanced degrees, M.D., Ph.D., and graduate students.

Lecture series, by special permission.

MR. UNGAR, STAFF, AND GUEST LECTURERS

Department of Classics

ASSOCIATE PROFESSOR BARLOW AND VISITING PROFESSOR YAVIS

The Department of Classics provides undergraduate courses for the acquisition of a reading knowledge of Greek and Latin and for the study of Greek and Latin literary masterpieces in their original form. Advanced courses providing a major in classics are offered from time to time as the need arises. In addition to the courses requiring knowledge of an ancient language, there are others given entirely in English, which deal with all phases of the Greek and Roman civilizations.

Since it may not be possible to offer courses in elementary Latin and Greek every year, students who desire to elect them should consult the instructor as far in advance as possible.

During the academic year 1956-57 the following courses were given: Greek 13, Latin 15.

Greek

11. *Elementary*. Study of Greek grammar through forms, syntax, vocabulary, and reading; selections from Xenophon's *Anabasis*. Indivisible course. To be offered 1957-58.

Open to freshmen.

Through the year.

MR. BARLOW

12. *Attic Greek Prose; Homer, Iliad*.

Prerequisite: Greek 11.

Through the year. M. W., 1; F. 2.

MR. BARLOW

13. *Plato, Apology; Plutarch, Lives*.

Prerequisite: Greek 12 or equivalent.

Through the year. M. Th., 12:35.

MR. YAVIS

123a. *Greek Civilization*. Lectures and readings on the history, literature, philosophy, art, religion, and government of Greece, with emphasis on the elements which have contributed most to Western civilization. Given in English.

Greek 123 may be counted in fulfillment of the general requirement in art, music, and literature (Group D), but not in fulfillment of the requirement in foreign language.

Open to freshmen.

Half course. To be offered first semester.

MR. BARLOW

Latin

11. *Elementary*. Introduction to the Latin language through study of forms, syntax, and vocabulary, with emphasis on the Latin element in English words. Reading of selections from Latin prose. Indivisible course. To be offered 1957-58.

Open to freshmen.

Through the year.

MR. BARLOW

12. *Cicero, Orations; Vergil, Aeneid*.

Prerequisite: Latin 11 or two years of Latin for admission.

Open to freshmen.

MR. BARLOW

13. *Selections from Horace and Catullus; Comedies of Plautus and Terence*. The work of the course may begin with easy prose selections, to satisfy the lack of uniformity in preparation in secondary schools.

Prerequisite: Latin 12 or three or four years of Latin for admission.

Open to freshmen.

Through the year. To be offered 1957-58.

MR. BARLOW

15. *Vergil, Aeneid VII-XII; Tacitus*.

Prerequisite: Latin 13.

Through the year. M. W. F., 8.

MR. YAVIS

17. *Roman Satire; Poets of the Augustan Age*.

Through the year.

MR. BARLOW

19. *Survey of Latin Literature*.

Through the year. To be offered 1957-58.

MR. BARLOW

123b. *Roman Civilization*. Lectures and readings on the history, literature, philosophy, art, religion, law, and government of ancient Rome, with emphasis on the transmission of Greek civilization, on the developments which have contributed to Western civilization, and on the condition of the Roman Empire during the early years of the development of Christianity. Given in English.

Latin 123 may be counted in fulfillment of the general requirement in art, music, and literature (Group D), but not in fulfillment of the requirement in foreign language.

Open to freshmen.

Half course. To be offered second semester 1957-58.

MR. BARLOW

Department of Economics and Sociology

PROFESSOR MAXWELL, PROFESSOR MELDER,* ASSOCIATE PROFESSOR KILLIAN, ASSOCIATE PROFESSOR HARGEST, ASSISTANT PROFESSOR NORDSTROM, ASSISTANT PROFESSOR HUND, ASSISTANT PROFESSOR VAN TASSEL, ASSISTANT PROFESSOR BALKO, LECTURER BREEN, LECTURER MORRIS, LECTURER CHURCHILL

UNDERGRADUATE WORK

The first aim of the department, in its undergraduate courses, is to give the student a comprehensive grasp of the underlying principles and functions of our economic and social institutions, and to develop habits of systematic and unbiased thought about these institutions. Some of the courses, however, contribute to the student's preparation for a business or professional career (Economics 13, 15a, 22, 26, etc.) and are specifically recommended to students who are candidates for the degree of Bachelor of Science in Business Administration. Conversely, some students majoring in economics may be advised to elect certain courses in Business Administration which are credited toward the degree of Bachelor of Arts (Business Administration 10, 16, 112, 117, 18, 124, 127, 20, 27a, 203, 220).

Students who have an interest in Business Administration but prefer a program which is less intensive than that required of candidates for the degree of Bachelor of Science in Business Administration may enroll as candidates for the degree of Bachelor of Arts with a major in economics. Such students should take the normal college program for freshmen and should elect *Business Administration 10* for the Group B requirement. In the second year they should elect *Economics 11* and *Business Administration 117*. In the third and fourth years they should elect courses in economics and in business administration in consultation with their advisers.

Economics 11 is a prerequisite to all other courses in economics. Similarly Sociology 11 is a prerequisite to other courses in sociology. Courses taken outside the department in partial fulfillment of the major requirement should be selected, subject to departmental ap-

* Absent on leave, 1956-57.

proval, so as to provide a unified program centering about the student's major interest. Majors in economics will ordinarily be required to take Economics 205a, Intermediate Economic Theory, and also Economics 280a, Senior Comprehensive.

Candidates for departmental honors will engage in a program of independent study consisting of reading and research designed in part to give them specialized training in the fields of their major interest and in part to supplement formal courses. Ordinarily a student will not begin his independent study until the second semester of the junior year, nor will he undertake the equivalent of more than two courses in this manner.

Courses in sociology will be found listed, with descriptions, immediately after the list of courses in economics.

In making elections, students should bear in mind that some advanced courses are offered only in alternating years.

GRADUATE WORK

The program for the degree of Master of Arts is worked out individually with each student who may choose to concentrate upon Economics, or Business Administration, or Sociology.

For the degree of Doctor of Philosophy, which may be taken in Economics, each student must choose six fields of study to be agreed upon as early as possible in the first year of residence beyond the M.A. A range of courses is offered in cycles of two or three years. Individual work with instructors constitutes a considerable part of the program.

The classification of courses as undergraduate, intermediate, and graduate is an elastic one. Graduate students of Economics should regard courses in Business Administration as part of the offerings of the Department of Economics and Sociology.

Courses in Economics

During the academic year 1956-57 the following courses were given: Economics 11, 13a, 13b, 15a, 21b, 22, 24b, 25b, 26, 28, 200a, 205a, 207a, 207b, 211b, 280a, 39a, 311, 322, 324, 325, 326, 327, 339, 340.

Descriptions of courses listed below under the designation "Business Administration" will be found in the announcement of "Courses in Business Administration".

1. PRIMARILY FOR UNDERGRADUATES

11. *Principles of Economics.*

Indivisible course.

Through the year. Tu. Th., 10; a third hour to be arranged.

MR. VAN TASSEL

Assisted by MR. COUPE

*Business Administration 112. Personnel Management.**Business Administration 117. Accounting.**Business Administration 124. Marketing.**Business Administration 127. Intermediate Accounting.*13a. *Money and Banking.*

Half course. First semester. M. W. F., 10.

MR. MAXWELL

13b. *Problems in Money and Banking.* Central banks, particularly the Federal Reserve System; monetary standards; theories of foreign exchange; monetary policy in the United States.

Prerequisite: Economics 13a or its equivalent.

Half course. Second semester. M. W. F., 10.

MR. MAXWELL

140b. *Consumer Economics.* A study of the consumers' roles in a market economy and of their problems arising in the purchase of the customary goods and services. Emphasis is upon housing, insurance, savings, investments, consumer services supplied by advertisers, private non-commercial agencies, the government, and the cooperative movement.

Half course. Second semester. Tu. Th., 10; third hour to be arranged.

MR. MELDER

Omitted 1956-57.

15a. *Public Finance.* The principles of governmental expenditures, revenues, and debts, with particular reference to the United States.

Half course. First semester. M. W. F., 9.

MR. MAXWELL

*Business Administration 16. Business Statistics.**Business Administration 18a. Corporation Finance.**Business Administration 19b. Introduction to Investments.*115b. *Fiscal Development of the United States.*

Half course. Second semester.

MR. MAXWELL

Omitted 1956-57.

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

Business Administration 20. Business Law.

200a. *Economic Growth*. An analysis of economic, cultural, social, and political factors making for growth. Factors within underdeveloped countries which must be changed or adjusted, if economic development is to proceed, will be analyzed.

Half course. First semester. Tu. Th., 3:30-4:45. MR. MORRIS

205a. *Intermediate Economic Theory*. An analysis of contemporary price theory.

Half course. First semester. Tu. Th. F., 2. MR. VAN TASSEL

Business Administration 203. Marketing Research.

207a. *International Trade Theory*. Particular emphasis is put on international value determination and the mechanisms for adjusting to international disequilibrium.

Half course. First semester. Tu. Th., 2-3:15. MR. VAN TASSEL

207b. *International Economic Policy*. A review of the rise of the world trading economy, techniques of commercial policy, and major questions of international economic policy.

Prerequisite: Economics 207a or equivalent.

Half course. Second semester. Tu. Th., 2-3:15. MR. VAN TASSEL

21a. *Business Cycles*. Analysis of recurrent business fluctuations differentiating the typical business cycle and its phases. Treatment of the history, theories of causation and proposals for control of the business cycle.

Half course. First semester. Tu. Th., 11-12:15.

Omitted 1956-57.

21b. *National Income Analysis*. A study of contemporary income theory.

Half course. Second semester. Tu. Th., 8; F., 2.

MR. VAN TASSEL

210a. *Economic and Social Reform*. A study of the development of economic institutions involved in society's attempt to solve its basic economic problems. General emphasis on free enterprise, planning and contemporary industrial organization oriented towards an improved understanding of the American economy.

Half course. First semester.

Omitted 1956-57.

211b. *Comparative Economic Systems*. An analysis of contemporary or recently industrialized economic systems such as capital-

ism, socialism, and fascism followed by a consideration of these systems as currently or recently found to exist in specific nations.

Half course. Second semester. Tu. Th., 8:35-9:50. MR. HUND

Business Administration 220. Analysis of Business Problems.

22a. *Labor Economics.* A survey of the nature of labor economics and labor problems, including the several approaches of organized workers and employers to these problems.

Half course. First semester. Tu. Th., 2-3:15. MR. MORRIS

22b. *Labor Economics.* The approach of government to labor force problems including industrial relations and social insurance.

Half course. Second semester. Tu. Th., 9; F., 1. MR. MELDER
Omitted 1956-57.

231. *Economic History of the United States.*

Through the year. W. F., 11-12:15.

Omitted 1956-57.

MR. MAXWELL AND MR. CAMPBELL

24b. *History of Economic Doctrine.* After a quick survey of ancient writers, attention will be given to Mercantilism and the doctrinal reaction from it as expressed by the Physiocrats and the Classical economists.

Half course. Second semester. M. W. F., 11. MR. MAXWELL
Omitted 1956-57.

25b. *Problems in Public Finance.* This course deals mainly with problems of post-war taxation and fiscal policy. The theory underlying the so-called "full employment" act of 1946 is discussed, along with methods by which it may be implemented. Other questions for examination are reform of the federal corporate income tax and death duties, incentive taxation, federal debt policy, the capital budget, federal budgetary procedure.

Half course. Second semester. M. W. F., 9. MR. MAXWELL

26. *Industrial Organization and Governmental Control.* An analysis of industrial organization and the resulting market structures followed by a consideration of the various forms of governmental regulation applied to this organization and structures. Emphasis is on appraising the appropriateness of existing governmental controls in specific industrial situations. The course is conducted on a seminar basis with student papers and reports often forming the basis for discussion.

Through the year. M. W., 2-3:15.

MR. HUND

Business Administration 27a. International Trade and Finance.

28. *Research in Selected Economic Problems.* Includes departmental honors work and other individual projects completed for credit.

Hours as arranged.

STAFF OF THE DEPARTMENT

280a. *Senior Comprehensive.* A survey designed to assist majors in integration of the field. Required for all senior majors.

Half course. First semester. Hours as arranged.

STAFF OF THE DEPARTMENT

29a. *Economics of Transportation.*

Half course. First semester. Hours as arranged.

Omitted 1956-57.

3. PRIMARILY FOR GRADUATE STUDENTS

39a. *Economic Theory.* Analysis of the theories of representative economists. Most attention is given to Marshall, Chamberlin, Keynes.

Half course. First semester. Hours to be arranged.

MR. MAXWELL

311. *Seminar.*

STAFF OF THE DEPARTMENT

Through the year. Hours to be arranged.

Research courses are offered to meet the needs of the individual students for work not presented in regularly scheduled courses.

322. *Research in Labor.*

MR. MELDER

324. *Research in Marketing.*

MR. BALKO

325. *Research in Public Finance and Money and Banking.*

MR. MAXWELL

326. *Research in Business Organization and Government Control of Business.*

MR. HUND

327. *Research in International Economics.*

MR. VAN TASSEL

339. *Research in Economic Theory.*

MR. MAXWELL

340. *Thesis.*

STAFF OF THE DEPARTMENT

Sociology

An undergraduate whose primary interest is in sociology may meet the departmental requirement for a major by completing Economics 11 and three or four courses in sociology together with three or two approved courses in related departments. General Education 14, History 205 and 230, Psychology 200 and 203, and Government 15 are particularly recommended for this purpose.

GRADUATE WORK

A range of courses sufficient for the needs of candidates for the master's degree only is offered. Individual work with instructors and in small intimate seminars constitutes a goodly part of the graduate student's program.

Courses in Sociology

During the academic year 1956-57 the following courses were given: 11a, 11b, 12b, 15a, 29.

1. PRIMARILY FOR UNDERGRADUATES

11a. *Introductory Sociology: Principles of Sociology.* A consideration of the basic principles of sociology including the development of man; culture; culture and personality; social organization and structure; groups and group life; social relations; social norms; collective behavior; human ecology and population; socialization and social interaction; social disorganization and change; social institutions.

Prerequisite for further work in sociology.

First semester. Tu. Th., 8; a third hour to be arranged.

MR. KILLIAN

Assisted by MR. MACDOWELL

11b. *Introductory Sociology: Sociological Analysis.* An analytical and theoretical approach to the materials in 11a, with emphasis on the development of sociological ideas and their use in policy making and in problem analysis. Advanced readings will be used and an emphasis will be placed on social structure, change and social institutions.

Prerequisite for further work in sociology.

Second semester. Tu. Th., 8; a third hour to be arranged.

MR. KILLIAN

Assisted by MR. MACDOWELL

12a. *Introduction to Cultural Anthropology.* The evolution and development of man and his culture: Basic concept; the races of man and their distribution; process of adaptation and adjustment through culture; primitive, historic and modern culture complexes compared; divergence, transmission, and function of culture; origin and growth of civilizations; contemporary pre-literate peoples; relationship of anthropology to the other social sciences.

Half course. Second semester. Tu. Th., 10-11:15.

MR. CHURCHILL

13a. *Crime, Delinquency and Society.*

Half course.

MR. KILLIAN

Omitted 1956-57.

15a. *Social Institutions.* Institutional theory: the history and development of major social institutions.

Social Control and Social Institutions. The basis of institutions in primitive experience; life functions and belief systems of primitive peoples; family and kinship systems as points of departure for institutional differentiation. Religious institutions and political institutions in the historical contexts of Hebrew, Greek, Roman and modern experiences.

Half course. First semester. M. W., 2-3:15.

MR. KILLIAN

16b. *Social Problems and Their Analysis.*

Half course.

MR. KILLIAN

Omitted 1956-57.

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS21b. *The Family and Society.*

Half course.

MR. KILLIAN

Omitted 1956-57.

25b. *Social Institutions. Legal Institutions.* Law and the social order: development of Western legal institutions; the normative content and analysis of legal institutions and law; relation to religious institutions; the legal tradition in Western society; law as a means of social control. Law, science and policy: law and its functions in modern times; the changing basis of legality; premises concerning man and his world in relation to law and its function. Sociology, anthropology and law: selected readings in theory and analysis of case materials.

Second semester. M. W., 2-3:15.

MR. KILLIAN

27a. *Industrial Sociology.* A study of industrial society with special emphasis on the relationships among persons as members of the many groups included in this society and on the impact of social institutions on the character of the relationships studied. The formal and informal groups within the industrial form will be given attention as will the firm and community viewed as interacting organizations.

Half course. First semester. Tu. Th., 8:35-9:50.

MR. HUND

Omitted 1956-57.

28. *Research in Selected Sociological Fields.* Includes departmental honors work and other individual projects completed for credit.

See also: Economics 140b, 210a, 22.

Through the year. Hours as arranged.

29a. *Social Theory and Introduction to Sociological Concepts.* The development of man's ideas about social life, emphasizing the chief contributions from Plato and Aristotle to Herbert Spencer. The general progress of sociology since Spencer.

Half course. First semester. M. W., 11-12:15. MR. KILLIAN

29b. *Advanced Sociological Theory.* A study of Sumner, Durkheim, Max Weber, and some recent concepts.

Half course. Second semester. M. W., 11-12:15. MR. KILLIAN

Department of Education

PROFESSOR JONES, ASSOCIATE PROFESSOR BORGER, ASSISTANT

PROFESSOR COFFEE, LECTURERS GOTSCHALL, HARRIMAN,

NASH AND SHEPHERD

With the cooperation of PROFESSOR WARMAN of the Graduate School of Geography, ASSOCIATE PROFESSOR BECK of the Department of Philosophy, MR. GRANGER, Director of Physical Education for Men and Miss HUGHES, Dean of Women.

The Department has as its primary objective the providing of cultural and professional study for teachers and prospective teachers in elementary and secondary schools and academies. It offers introductory courses in Education for all students who may be interested in teaching, and well integrated programs of training at both the elementary and high school levels.

UNDERGRADUATE WORK

The Department encourages all students who may be interested in preparing for teaching to consult with some member of its staff as early in their career at the College as convenient. The actual electing of courses in Education, however, should be postponed until the junior year. During the first two years, students should

complete as many of the specific requirements for the A.B. degree as possible, and lay a broad foundation of scholarship.

In conformity with its policy of emphasizing the importance of scholarly background in the preparation of teachers, the Department offers its courses as electives, and not as a major in the College. This means that the students preparing to teach should elect their majors with careful attention to extensive preparation in areas in which they wish to teach.

Education courses at the undergraduate level are offered primarily with three purposes in mind: (1) To provide introductory instruction to students who plan to teach in secondary schools and academies, and who in preparation for such teaching plan a fifth year of study, leading to the degree of Master of Arts in Education. (2) To provide an integrated program of courses and internship teaching to students who, immediately upon graduation, wish to teach in elementary schools. (3) To offer certain introductory courses in Education to students who have not definitely decided upon teaching as a career but who desire some acquaintance with the problems of the field.

For students desiring to enter elementary school teaching immediately upon receiving the A.B. degree, a program has been evolved, in cooperation with the Faculty of the College, whereby the election of up to 18 semester hours in Education may be possible, including internship teaching in the first semester of the senior year. Since the amount of professional work in Education forms so large a percentage of the program of study of such students in the junior and senior years, it is obvious that careful planning must be done throughout the college course to have the desired number of electives available for work in Education in these last two years.

GRADUATE WORK

For students wishing to prepare for teaching in secondary schools and academies the Department recommends high concentration in the undergraduate program upon the subject-matter fields in which they wish to teach, and suggests that they reserve for a fifth year most of the professional work in the theory and practice of teaching. A fifth year program leading to the degree of Master of Arts in Education is offered by the Department with majors available in elementary and secondary teaching aid. The program includes

additional work in the student's subject-matter field, professional courses in Education, and supervised internship teaching in secondary schools. The Master's degree is more and more being required of new appointees in high schools, and is usually rewarded by a higher level of remuneration. To assist high ranking students who find the one year of full time graduate work difficult to finance, the Department has a limited number of scholarships available to assist with tuition costs.

Requirements. The requirements for the degree of Master of Arts in Education cannot be adequately stated in terms of courses to be taken, because the evaluation of the work of each student will be made on the basis of achievement rather than on the basis of courses completed. However, the minimum essentials in terms of course requirements are outlined below.

Course requirements. The student is expected to elect one of the following groups of studies as the field in which he wishes to teach:

- (a) Mathematics and natural sciences
- (b) History, geography, and economics
- (c) Ancient and modern foreign languages
- (d) English, alone or in combination with some related subject.

Prior to receiving the degree, the candidate must have completed in undergraduate and graduate study combined not less than five year-courses in one of the above groups, or in a combination of groups approved by the Department of Education. At least two semester-courses in a subject-matter field must be taken as a part of the study in residence for the advanced degree and must be passed with a grade of B— or better for graduate credit. In addition to the above requirement in the subject-matter field, eight semester-courses of graduate work in education will normally be required. The program of courses to meet these requirements must be approved in advance by the Department. Changes in the proportion of education and subject-matter courses may be made by the Department on the basis of the candidate's previous training. Work, additional to the above requirements, either in the subject-matter field or in education, or both, may be required if this seems necessary for the adequate preparation of the candidate.

Internship Teaching. The Department provides opportunities

for internship teaching under supervision for all graduate students majoring in Education. For graduate students of the Department who have not had teaching experience, satisfactory work in internship teaching is a requirement for the degree of Master of Arts in Education.

Thesis or Additional Study in Lieu of Thesis. All candidates for the degree of Master of Arts in Education must choose one of the following plans:

(a) Prepare an acceptable thesis or special report.

(b) Elect, in lieu of thesis, two additional semester courses in subject-matter fields (making a total of at least 4 semester courses in subject-matter area). This plan will apply primarily to experienced teachers and particularly to those doing much of their study in the summer sessions.

(c) Elect, in lieu of thesis, a two-semester or double seminar in which intensive work will be required in preparing and presenting reports before fellow graduate students and the staff.

Final oral examination. The passing of a final oral examination will be required of all candidates.

Courses in Education

During the academic year 1956-57 the following courses were given: 27b, 200a, 200b, 201a, 201b, 202b, 203b, 207b, 208, 209a, 210, 214, 215a, 260b, 263a, 311, 315a, 350, 380b.

1. PRIMARILY FOR UNDERGRADUATES

200a. *Historical Foundations of Education.* A study of the historical factors involved in the development of modern education. It is designed for both the prospective teacher and the general student interested in education as an institution in American society.

Half course. First semester. Tu. Th., 8:35-9:50. MR. NASH

200b. *Philosophical Foundations of Education.* A study of the philosophical background for the educational principles and practice in American schools.

Half course. Second semester. Tu. Th., 8:35-9:50. MR. NASH

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

201a. *Educational Psychology: Child Growth and Development.* A study of the principles basic to the understanding of children with special attention to emotional and social development and learning in the elementary school years.

Half course. First semester. M. W. F., 9.

MR. COFFEE

201b. *Educational Psychology: Adolescent Growth and Development.* A study of psychological principles as they bear upon learning and other problems of education with special reference to the growth and development of youth of secondary school age. Extra work required of undergraduates who desire a third hour of credit.

Half course. Second semester. Th., 4-6.

MR. JONES

203b. *Curriculum Development in Secondary Education.* A study of the historical background, basic issues, principles, and procedures of curriculum organization and development in secondary schools. Extra work required of undergraduates.

Half course. Second semester. F., 4-6.

MR. NASH

207b. *Use of Audio-Visual Materials in Teaching.* A survey of principles and practices in the use of visual and auditory materials and community resources in teaching. Extra work required of undergraduates.

Half course. Second semester. W., 4-6.

MR. BORGER

208a. *Methods and Materials in Secondary Education.* A study of methods and techniques used by the teacher in the high school classroom, and a survey of materials available. Extra work required of undergraduates.

Half course. First semester. F., 4-6.

MR. NASH

209a. *Teaching of Social Studies.* A study of objectives, methods and materials used in the teaching of the social studies in the secondary schools. Extra work required of undergraduates.

Half course. First semester. W., 4-6.

MR. BORGER

210a. *Educational Psychology, Advanced: Psychological Approach to Citizenship Development.* A study and evaluation of the experimental evidence on the problem of values as they relate to the problems of character and citizenship development among children and adolescents. Extra work required of undergraduates.

Half course. First semester. Th., 4-6.

MR. JONES

214. *Tests and Measurements Applied to Psychological and Educational Problems.* A study of the measurement of aptitude, achievement, interest and attitude. Theoretical considerations and practical problems will be included. Extra work required of undergraduates. Divisible course.

Through the year. Tu., 4-6.

MR. JONES

215a. *Internship Teaching in the Elementary School.* An extended period of observation and practice in teaching under supervision in regularly organized classes in the middle grades in public schools. Each student is assigned to a critic teacher, under whom he or she works for a minimum of two days per week for the first semester. The first two weeks of this period is normally devoted to observation; the remainder of the time to teaching, under supervision. Lesson planning, pupil evaluation, and playground supervision are required of each student.

Half course. First semester.

MR. JONES, MRS. HARRIMAN,
AND CRITIC TEACHERS

20b. (*Geography 20b.*) *Geography in Education.* A survey of geography in the present-day American schools. The course is designed to meet the needs of those expecting to teach geography. Extra work required of undergraduates.

Half course. Second semester. W. F., 1-2.

MR. WARMAN

27b. *Principles of School and Recreational Leadership.* The aim of this course will be to present the basic concepts and techniques of educational and recreational leadership. Lectures, readings, discussions, and field work. Permission of instructor required for registration. Extra work required of undergraduates.

Half course. Second semester. Tu., 4-6.

MISS HUGHES

263a. *Methods and Materials in Teaching of Language Arts in the Elementary School.* This course considers methods and materials in the teaching of the language arts, in the middle grades, with special reference to reading. Particular emphasis will be given to provision for individual differences in teaching, and to the development of independent study skills. Field trips to selected schools will be arranged. Extra work required of undergraduates.

Half course. First semester. F., 4-6.

MR. SHEPHERD

260b. *Methods and Materials in Elementary Education.* A study of the most essential materials and methods in elementary school instruction. Special attention will be given to the methods of teach-

ing and learning in the social studies and mathematics, with brief units on the methods of cooperating most effectively with special teachers in the arts. Lectures and demonstrations by visiting specialists will be provided on particular topics, and field trips will be arranged for classroom demonstrations of certain principles and procedures. Extra work required of undergraduates.

Half course. Second semester. F., 4-6.

MR. SHEPHERD

290b. *Philosophy of Education*. An examination of aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems.

Half course. Second semester. W. F., 11-12:15.

MR. NASH

3. PRIMARILY FOR GRADUATE STUDENTS

310b. *Citizenship Development: Methods and Materials*. A study of procedures and programs in character and citizenship education in the schools. Attention will be given not only to curricular and co-curricular activities in the schools but also to the interrelations between the school and other institutions and agencies in the community as they relate to the development of values and conduct in youth.

Half course. Second semester. M., 4-6.

MR. JONES

311. *Educational and Vocational Guidance*. A survey of the techniques and tools of the educational and vocational counselor, including occupational information, vocational testing, methods of interviewing and counseling, case histories and reports, administration and organization of educational and vocational guidance programs.

Through the year. M., 4-6.

MR. COFFEE

315a. *Internship Teaching in the Secondary School*. An extensive period of observation and teaching in the field or fields in which the student plans to teach in secondary school. Individual supervision is given by the department and by critic teachers in cooperating schools.

First semester. Time to be arranged.

MR. JONES, MR. NASH, AND CRITIC TEACHERS

350. *Research in Education*. Individual direction of students in their research projects.

THE STAFF

380. *Departmental Seminars on Current Problems*.

Double seminar. Second semester. M. Th., 7:30-9:30.

THE STAFF AND GRADUATE STUDENTS

Department of English

PROFESSOR ILLINGWORTH, ASSOCIATE PROFESSOR ANDERSON,
ASSOCIATE PROFESSOR CARTER, ASSISTANT PROFESSOR LETENDRE,
ASSISTANT PROFESSOR BEARD, MR. MEIXNER

All freshmen must take both English 11a and b. Freshmen may also enroll in English 143a.

General Education 17 (Great English and American Writers) is designed especially for non-English majors, and either half is recommended for students who wish to take a course in literature as a means of fulfilling the requirement of a third semester of English beyond English 11. English 13a, 111, and other courses (with the consent of the instructor) are also open to non-English majors; especially recommended is English 13a (Introduction to Poetry).

A major in English consists of a minimum of seven courses in addition to English 11, as follows:

1. English 13a. Normally this course should be taken in the sophomore year. *For English majors*, English 13a is prerequisite to any of the following courses: 101b, 104, 105, 107a, 110, 113, 117b, and 122a.
2. English 150b and three other half-courses in English from a group of courses open only to juniors and seniors, namely: 101b, 104, 105, 107a, 110, 113, 117b, and 122a.
3. Three additional half-courses in English.
4. Three courses in allied fields: General Education 14; a year course in philosophy (preferably Philosophy 12); and one other course approved by the Department of English, preferably from the following list: Fine Arts 11, General Education 143, French 113, German 141, Greek 123a, History 12, History 230, Latin 123b, and Music 12.

An English major who has not been credited with two units of Latin or Greek for admission to the college must complete either a course in Latin or Greek or both the following half-courses, given in English: Greek 123a and Latin 123b. If possible, this requirement should be met in the freshman year.

English majors should follow as closely as possible the following program:

First year

English 11

Group A

Group B (General Education 14)

Foreign language

One elective (A course which meets the general bachelor of arts requirement in Fine Arts is recommended.)

Second year

English 13a and three other half-courses in English from group of courses open to sophomores, namely: 16a, 18, 19b, 111, 126a, 127a, 142a, 143a, 146a, 147b, and General Education 18

Group A

Foreign language

Two electives. Courses recommended are Fine Arts 11, Music 12, General Education 143, History 12 and 230, French 113, German 141, Latin 123b and Greek 123a.

Third Year

Two half-courses in English from courses open only to juniors and seniors

Two other half-courses in English (recommended)

Foreign language

Group B (a year course in philosophy)

One elective

Fourth year

English 150b and one other half-course in English from courses open only to juniors and seniors

Two other half-courses in English (recommended)

Three electives.

PRIZES IN ENGLISH

The Hoyt Poetry Prize of fifteen dollars is awarded annually by the Department of English for the best poem by an undergraduate. This is the interest on a fund established by the alumni as a memorial to Prentiss Cheney Hoyt, Professor of English at Clark University from 1909 to 1920.

The Loring Dodd Drama Contest, inaugurated in 1955, offers a prize of \$25 to the student writing the best one-act play. Loring Dodd was Professor of English from 1910 to 1949 and also Chairman of the English Department.

Courses in English

During the academic year 1956-57 the following courses were given: 11, 12, 13a, 16b, 18b, 19b, 101b, 105, 107a, 111, 117b, 126a, 143a, 150b.

Courses in English are classified under the following headings:

- I Composition
- IIA Literature, Surveys and Other General Courses
- IIB Literature, Special Periods or Individual Authors
- III Public Speaking and Dramatics

<i>Course number</i>		<i>Classification</i>
11	I	Composition
12	III	Public Speaking and Dramatics
13	II A	Literature, Surveys, etc.
16	I	Composition
18	II A	Literature, Surveys, etc.
19	I	Composition
101	II B	Literature, Special Periods, etc.
104	II B	" " " "
105	II B	" " " "
107a	II B	" " " "
110	II B	" " " "
111	II A	Literature, Surveys, etc.
113	II B	Literature, Special Periods, etc.
117	II B	" " " "
122	II B	" " " "
126	II B	" " " "
127	II B	" " " "
142	II A	Literature, Surveys, etc.
143	II B	Literature, Special Periods, etc.
146	III	Public Speaking and Dramatics
147	III	" " " "
150b	II A	Literature, Surveys, etc.

I. COMPOSITION

11. *Composition and Literature.* The purpose of English 11 is to develop clarity and accuracy in reading and writing and to introduce the student to the various types of literature.

Required of all freshmen.

Through the year. M. W. F., 8, 9; Tu. Th., 8 and F., 2; Tu. Th., 9 and F., 1; Tu. Th., 10 and M., 1.

MR. ANDERSON, MR. BEARD, MR. CARTER,
MR. LETENDRE AND MR. MEIXNER

16b. *Creative Writing.* Projects in the writing of expository prose, narrative fiction, the one-act play and verse.

Half course. To be offered second semester. Tu. Th., 8:35-9:50.

MR. LETENDRE

19b. *Advanced Composition*. This course is designed for students who desire further training in the basic principles of composition. Special attention is given word choice, sentence and paragraph structure, and organization. Exposition is emphasized. Individual conferences.

Half course. To be offered second semester. M. W. F., 10.

MR. MEIXNER

II A. LITERATURE: SURVEYS AND OTHER GENERAL COURSES

13a. *Introduction to Poetry*. Required of all English majors.

Half course. To be offered first semester. M. W. F., 9.

MR. CARTER

General Education 17. Great English and American Writers. See "General Education" immediately preceding the alphabetical list of "Departments and Courses."

18. *The Bible as Literature*. First semester, Old Testament; second semester, New Testament.

M. W. F., 10.

MR. ILLINGWORTH

18a and 18b offered in alternate years.

18a to be offered 1957-58.

111. *A Survey of American Literature*. A course in American literature from Puritan times to the present.

Divisible for non-English majors.

Through the year. Tu. Th., 10-11:15.

MR. BEARD, *first semester*

MR. LETENDRE, *second semester*

Offered in alternate years. Not to be offered 1957-58.

142a. *The English Novel*. A study of the novel from its beginning to Thomas Hardy.

Half course. To be offered first semester. M. W. F., 10.

MR. ILLINGWORTH

150b. *Senior Survey*. Required of all English majors in the senior year.

Half course. Second semester. M. W., 2-3:15. MR. ANDERSON

II B. LITERATURE: SPECIAL PERIODS OR INDIVIDUAL AUTHORS

101b. *Chaucer*.

Half course. Second semester. Tu. Th., 9; F. 1. MR. ANDERSON

Offered in alternate years. Not to be offered 1957-58.

107a. *English Literature from Beowulf to 1600 (exclusive of drama).*

Half course. To be offered first semester. M. W., 2-3:15.

MR. ANDERSON

113. *Shakespeare and the Elizabethan Drama.*

Divisible course. Through the year. Tu. Th., 10-11:15.

MR. ANDERSON

Offered in alternate years. To be offered 1957-58.

104. *Milton and the Seventeenth Century.*

Divisible course.

Through the year. M. W. F., 10.

MR. CARTER

Offered in alternate years. To be offered 1957-58.

105. *Eighteenth Century.*

Divisible course.

Through the year. M. W. F., 10.

MR. CARTER

Offered in alternate years. Not to be offered 1957-58.

117b. *English Romantic Poetry.*

Half course. Second semester. M. W. F., 11.

MR. BEARD

Offered in alternate years. Not to be offered 1957-58.

110. *Victorian Literature.*

Divisible course. Through the year. M. W. F., 11. MR. BEARD

Offered in alternate years. To be offered 1957-58.

122a. *Modern Poetry.* Dickinson, Hopkins, Frost, and Eliot are used as key figures in a general survey of the main trends in modern poetry and poetic criticism.

Half course. First semester. Tu. Th., 8:35-9:50. MR. LETENDRE

Offered in alternate years. To be offered 1957-58.

126a. *Modern British and American Drama.*

Half course. First semester. Tu. Th., 8:35-9:50. MR. LETENDRE

Offered in alternate years. Not to be offered 1957-58.

127b. *Modern Continental Drama.*

Half course. Second semester. Tu. Th., 8:35-9:50. MR. LETENDRE

Offered in alternate years. To be offered 1957-58.

143a. *The Modern Novel.* A comparative study of representative twentieth century novels of Russia, Germany, France, Sweden, England, and the United States to show how different cultures have treated this vehicle of literary expression.

Open to freshmen.

Half course. M. W. F., 10.

MR. ILLINGWORTH

Offered in alternate years. Not to be offered 1957-58.

III. PUBLIC SPEAKING AND DRAMATICS

12. *Public Speaking*. A course in the composition and delivery of the most commonly used speeches, parliamentary procedure, discussion groups, and vocabulary drill.

Indivisible course.

Through the year. M. W. F., 9.

MR. ILLINGWORTH

146a. *Oral Interpretation of Literature*. A course stressing the imagination and the dramatic instinct as fundamental sources of good oral and pantomimic expression. The intellectual elements of vocal expression are studied with special reference to phrasing, inflection, and emphasis; individual and choral speaking.

Permission of the instructor is a condition for enrolling in this course.

Half course. First semester.

MR. ILLINGWORTH

Offered irregularly.

147b. *The Oral Interpretation of Shakespeare*. The life of Elizabethan England with special emphasis on the theatre of Shakespeare. The plays to be read will include *Hamlet*, *Cymbeline*, *Julius Caesar*, *King Lear*, *Othello*, *The Comedy of Errors*, *Merchant of Venice*, *Taming of the Shrew*, *As You Like It*, *Henry V* and *Richard II*.

Half course. Second semester.

MR. ILLINGWORTH

Offered irregularly.

Department of Fine Arts

(ART AND MUSIC)

ASSISTANT PROFESSOR COWARDIN, ASSISTANT PROFESSOR

RAFFMAN, AND VISITING LECTURER VEY

With the cooperation of ASSOCIATE PROFESSOR NICOL, ASSOCIATE PROFESSOR BARLOW, ASSOCIATE PROFESSOR EDWARDS, and MR. SANTE GRAZIANI, Head of the School of the Worcester Art Museum, and his Staff.

The Department offers two programs for a major in Fine Arts. One is intended for those interested primarily in the history of art.

The other is designed to provide sound training in fundamentals for qualified students whose principal interest is in the practice of art.

The specific requirements for a major in Fine Arts are as follows:

History of Art

- 1) Fine Arts 11, to be completed before the end of the sophomore year.
- 2) Fine Arts 111.
- 3) General Education 14, to be completed before the end of the sophomore year.
- 4) Two full courses chosen from the following: Fine Arts 15, 16, 191a, 192a.
- 5) One full course chosen from the following: French 113, German 141, Greek 123a and Latin 123b.
- 6) Music 12.

The major in the practice of art is offered jointly by the University and the School of the Worcester Art Museum. It aims to provide, within the framework of a liberal arts program, a solid preparation for specialized study or practice in any of several branches in the field of art. This includes teaching, commercial art, museum work, architecture, industrial design, illustration, and independent practice in painting or design.

Students electing this program take thirteen courses at the University (which must satisfy the general requirements for the bachelor's degree and must include Fine Arts 11 and General Education 14), and seven courses at the Museum School. These are distributed over the four-year college period as follows:

	Clark	Museum School
Freshman year	4	1
Sophomore year	4	1
Junior year	3	2
Senior year	2	3

Enrollment in this program is limited. Where other qualifications are equal, preference will be given to residents of Worcester County. Candidates should send their completed application forms to the Director of Admissions, Clark University, Worcester 10, Massachusetts, by April 15. With this material they should also submit a portfolio of about a dozen representative pieces of their work in

painting, drawing, design, etc., which should be clearly marked with the candidate's name and address.

Courses in Fine Arts

During the academic year 1956-57 the following courses in Fine Arts were given: 11, 13b, 15, 192a.

1. PRIMARILY FOR UNDERGRADUATES

Fine Arts 11. An Introduction to Western Art. A preliminary discussion of terminology and basic aesthetic considerations in the visual arts is followed by a study of architecture, sculpture, and painting from the beginnings to the present day. Field trips are required.

Open to freshmen.

Through the year. M. W. F., 8.

MR. COWARDIN

Fine Arts 111. (Representation I.) Introduction to the drawing or depiction of objects in the field of vision; theory and practice in the statement of line, form, light and shade, and perspective. Study of the nature and use of materials and instruments; exercises from objects and from living models; observation of method and accomplishment found in museum collections.

Through the year. Nine class hours weekly. M. W. F., 1:30. At the Worcester Art Museum. MR. GRAZIANI AND MISS MURPHY

Fine Arts 12b. A Survey of Painting in the West. The development of pictorial expression from the beginning to the present. Emphasis is placed upon methods and styles. Field trips are required. Designed primarily for non-majors. May not be counted in addition to Fine Arts 11.

Open to freshmen.

Half course. Second semester. Tu. Th., 10; M., 2. MR. COWARDIN
Not to be offered in 1957-58.

Fine Arts 13b. An Introduction to the History of Painting and Sculpture. A consideration of some of the major styles in painting and sculpture from 600 B.C. to the present. Each style is approached in terms of a detailed study of a few principal examples. Emphasis is placed on the visual, aesthetic character of works of art. Historical context is treated only incidentally.

Half course. Second semester. Tu. Th., 2-3:15.

MR. VEY

Fine Arts 15. Art of the Renaissance in Italy. A detailed consideration of the architecture, sculpture, and painting of the Italian Renaissance. The first semester is devoted to the fifteenth century

and the second semester to the sixteenth. Emphasis is placed on the historical background. Field trips are required.

Through the year. M. W. F., 10.

MR. COWARDIN

Offered in alternate years. Not to be offered 1957-58.

Fine Arts 16. The Art of the Seventeenth and Eighteenth Centuries. A consideration of the origins of the baroque style, followed by a study of major works of European art of the seventeenth and eighteenth centuries. The principal stylistic trends are stressed. The more important artistic personalities—Bernini, Rubens, Rembrandt, Velasquez, and others, are also treated in detail. Field trips are required.

Through the year. M. W. F., 10.

INSTRUCTOR TO BE ANNOUNCED

Offered in alternate years. To be offered 1957-58.

Fine Arts 192a. The Art of China and Japan. An introduction to the art of the Far East. Sculpture and painting in China from the prehistoric period to the Ming dynasty, and, in Japan, from the Suiko to the Tokugawa period. Architecture will be treated only incidentally. Field trips are required.

Half course. First semester. Tu. Th., 10; M., 2.

MR. COWARDIN

Offered in alternate years. Not to be offered 1957-58.

Fine Arts 199. Advanced work at the School of the Worcester Art Museum for majors in the practice of art.

STAFF OF THE MUSEUM SCHOOL

Fine Arts 191a. The Art of the Ancient Near East and India. This course is primarily concerned with architecture and sculpture in ancient Mesopotamia, Assyria, Persia, and India. Significant works are examined critically and studied in relation to their historical and religious background. Field trips are required.

Half course. First semester. Tu. Th., 10; M., 2.

MR. COWARDIN

Offered in alternate years. To be offered 1957-58.

Courses in Music

Music 12a. Introduction to Music. With "learning to listen" as its motif and designed for the student without previous musical training this course deals with the basic theoretical and materials of music.

Half course. First semester. Tu. Th., 9; F., 1.

MR. RAFFMAN

Music 12b. Baroque and Classical Music. Characteristic works of Bach, Handel, Haydn, Mozart, and the young Beethoven will

be examined with respect to historical precedent, technical devices, and style.

Prerequisite: Music 12a.

Half course. Second semester. Tu. Th., 9; F., 1. MR. RAFFMAN

Music 13a. Twentieth Century Music. An examination of the works of Debussy, Ravel, Stravinsky, Hindemith, Schönberg, Bartok, and other significant composers whose works have been the driving force behind the tonal advances of the past fifty years. The influence of jazz on both American and European music will be discussed, as well as jazz in its pure state.

Prerequisite: Music 12a.

Half course. First semester. Tu. Th., 10-11:15. MR. RAFFMAN

Music 13b. Romantic Music. Starting with the later works of Beethoven and concluding with the advent of impressionism, the German, French, and Russian masters of the 19th century are studied with respect to the stylistic innovations of the period.

Prerequisite: Music 12a.

Half course. Second semester. Tu. Th., 10-11:15. MR. RAFFMAN

Music 14b. Practical Music. Designed primarily for the student with previous musical training and with structural analysis of music as its motif, this course deals extensively with music theory and ear training. There is dictation from both piano and records, as well as extensive score reading.

Prerequisite: permission of instructor.

Half course. Second semester. Time to be arranged.

MR. RAFFMAN

Offered in alternate years. To be offered 1957-58.

Freshman Orientation Course

Orientation. A required non-credit course for freshmen. Two periods per week are required for the first half of the first semester and one period per week is required for the remainder of this semester. Additional class periods are planned during the second semester to discuss the selection of a major field of study.

Orientation: the history and nature of the university; liberal and vocational education; the curriculum; the individual in relation to the institution, the staff and fellow students; the library; reading; note taking; methods of study; examinations; etc.

DEAN HUGHES AND DEAN BORGER

Physiology of Sex.

DR. CONSTANTIAN AND DR. KRESSLER

Geography

PROFESSOR VAN VALKENBURG, PROFESSOR MURPHY, PROFESSOR
LOUGEE, PROFESSOR WARMAN, PROFESSOR HIGBEE, INSTRUCTOR
BURNHAM, VISITING PROFESSOR RAISZ

A complete statement of the organization and special requirements in the Graduate School of Geography will be found in an earlier section of this catalog under the heading "The Graduate School of Geography."

UNDERGRADUATE PROGRAMS

Undergraduates planning to major in geography or to enter graduate work in geography are urged to consult the geography staff early in their undergraduate courses, to plan suitable programs including essential courses in related fields.

Majors in geography are required to take seven year-courses, or the equivalent, in geography and related fields. At least four, and not more than five of these courses must be in geography.

Geography 10, Principles of Geography, is usually taken in the freshman year (or as early as possible after the major subject is chosen to be geography). One or two of the following courses may be taken during the sophomore year: Geography 12a, Introduction to Climatology; Geography 16, Economic Geography; Geography 191, Cartography.

Courses in geography, such as 28a, Geography of New England, or 25, Conservation of Natural Resources, or regional courses should not be undertaken until the junior or senior years. Juniors of superior standing and seniors may be accepted, by special permission, to take number "2" geography courses, such as 201, Political Geography; 20b, Geography in Education (primarily for those expecting to teach); 282a, Geography of North America; 283b, Geography of South America; 285a, Geography of Europe; 285b, Geography of Asia. A non-credit seminar is conducted for all seniors who are majoring in geography.

COURSES IN FIELDS RELATED TO GEOGRAPHY

Students majoring in geography should plan early to take the required courses in other fields in order to possess the prerequisites for

admission to advanced related courses in their junior and senior years to parallel the courses in their geography program.

Subjects in Group A, which are strongly recommended by the staff of the Department of Geography, are geology and biology. However, where special interest is expressed in physics, chemistry, psychology, or mathematics the student's program can be planned to include these subjects.

Related fields may be found listed under Group B. General Education 14 is recommended for the freshman year. Courses recommended for the sophomore year are: Sociology 11, Economics 11, Government 15, History 12. More advanced work in the fields of sociology, international relations, psychology and philosophy will depend largely upon the individual student's interests and desires.

"HONORS WORK" AND COMPREHENSIVE EXAMINATIONS

The Clark University Graduate School of Geography offers opportunity to properly qualified students for advanced training in geography. The staff, composed of specialists in their various fields of geography offer regular courses in instruction and direct advanced students in research work. Hence, a junior or senior pursuing an "honors program" in geography is afforded an opportunity to associate with other students in the Graduate School of Geography. For example, a superior student, after petitioning and receiving approval of the College Board and the Secretary of the Graduate Board, may undertake Geography 391, Advanced Cartography; 314, Physiography of the Western Hemisphere; 33a, Soils; and 34, Land Use; 32, Climatology; 36, Problems of Economic Geography; and some graduate regional courses. On rare occasions an undergraduate student has been invited to participate in the Fall Field Camp of the Graduate School.

Independent research projects may be undertaken with the adviser in constant surveillance. This research work may be in the fields of human geography, physiography, geography in education, economic geography, land utilization, cartography and regional geography. Such research work must be completed within the semester in which it is started, or proof advanced that the study warrants more time. The staff also conducts an oral examination of at least one hour's length to ascertain the achievement of an "honors student."

A seminar, required of all seniors who are majoring in geography, is established to explore problems relative to the comprehensive examinations.

The Alpha Sigma Chapter of Gamma Theta Upsilon, national geography fraternity, provides professional and social affiliations between graduate and undergraduate geography majors.

Courses in Geography

During the academic year 1956-57 the following courses were given: 10, 12b, 15b, 191, 201, 282a, 283a, 285a, 285b, 291, 298a, 30, 32, 33b, 34b, 36, 37a, 37b, 300, 315a, 361, 391a, 399.

1. PRIMARILY FOR UNDERGRADUATES

10. *Principles of Geography.* An introductory course dealing primarily with the physical phases of geography and the application of the principles of geography to the study of selected regions throughout the world. Juniors and seniors admitted only by special permission.

Open to freshmen.

Through the year. M. W. F., 10.

MR. WARMAN

12a. *Introduction to Climatology.* Elements of meteorology and climatology with practical exercises. Emphasis on most recent theories; explanation of distribution of types of climate and weather.

Prerequisite: Geography 10 or equivalent.

Half course. First semester. M. W. F., 8.

MR. WARMAN

16. *Economic Geography.* The geography of the world's mineral, plant and soil resources with special reference to problems of use and conservation.

Prerequisite: Geography 10 or Economics 11, or equivalent.

Through the year. M. W. F., 11-12:15.

MR. HIGBEE

191. *Cartography and Graphics.* Preparation of maps, graphs, charts, and block drawings. Since space is limited the instructor should be conferred with upon registration.

Through the year. M., 3-5; Tu., 2.

MR. BURNHAM

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

20b. *Geography in Education.* A survey of geography in the present-day American school system, designed to meet the needs of those expecting to teach geography.

This class usually meets in the late afternoon for the convenience of public and private school teachers.

Half course. Second semester. W., 4-6.

MR. WARMAN

25b. *Conservation of Natural Resources.* A survey of natural resources including a study of ways and means of insuring wise utilization of essential or strategic resources.

Second semester. Tu. W., 1. Third hour to be arranged.

Offered in alternate years. To be omitted 1957-58.

28a. *Geography of New England.* A field and lecture course with special emphasis on Worcester first, then New England. Class meetings begin about the middle of October, following the field camp. Because of the late beginning, three special week-end programs of three hours each of laboratory work in the field, with carefully prepared reports of each are required.

Prerequisites: Geography 10 and Geology 12, or equivalent.

Half course. First semester. M. W. F., 9.

MR. LOUGEE

201. *Political Geography.* A study of major political problems of the world as related to geographic factors. Application of principles to international relations of selected regions.

Through the year. M., 1; Tu. Th., 10.

MR. VAN VALKENBURG

282b. *Geography of Anglo-America.* A systematic regional treatment of the physical, economic and cultural geography of the United States, Canada and Alaska.

Half course. Second semester. M. W. F., 9.

MR. LOUGEE

283a. *Geography of Middle America.* Geographic background of the republics and islands of the Caribbean; analysis of selected important regions; increasing importance of the Caribbean area in commercial and political relations; detailed study of large scale maps.

Half course. First semester. M. W., 1 (one hour map lab.).

MR. WARMAN

283b. *Geography of South America.* Analysis of the major geographic regions; special geographic problems of Latin American governments; detailed study of topographic maps.

Half course. Second semester. M. W. F., 8.

MR. WARMAN

285a. *Geography of Europe.* Intensive survey of the continent and detailed study of selected regions.

Half course. First semester. Tu. Th., 1.

MR. VAN VALKENBURG

285b. *Geography of Asia*. An intensive study of the continent, region by region.

Half course. Second semester. Tu. Th., 1. MR. VAN VALKENBURG

298. *Map and Aerial Photograph Interpretation*.

Through the year. Th., 3-5.

3. PRIMARILY FOR GRADUATE STUDENTS

30. *Seminar*. Required of all graduate students.

Meets every week. Time to be arranged.

THE STAFF

32. *Regional Climatology*. A study of the climates of the world by major regional examples.

Two hours, through the year. Tu. Th., 8. MR. VAN VALKENBURG

33a. *Soils Geography*. A review of the development and character of soils, their distribution and economic significance, in the light of their geographical relationships.

Two hours, first semester. W., 2-4.

MR. HIGBEE

Offered in alternate years. Not to be offered 1957-58.

34. *Land Utilization and Planning*. An outline of relationships that physical and cultural factors bear to purpose and pattern of land uses, conservation of land resources, and basic elements of land planning.

Two hours, through the year. W., 2-4.

MR. HIGBEE

36. *Problems in Economic Geography*. An advanced study, emphasizing the various research fields of economic geography. Research methods and techniques in mining, agriculture, manufacturing and transportation are considered in detail.

Two hours, through the year. M. W., 10.

MR. MURPHY

37a. *Human Geography*. A study of the influence and effect of location, area, relief, coastline, drainage systems, climate, and other geographic factors, separately and in their mutual interaction upon the economic, social and political development of peoples and states.

Half course. First semester. Tu. Th., 2.

MR. WARMAN

(37a and 37b should be taken in the same year.)

37b. *Cultural Geography*. A summary of the role that geographic factors have played in the evolution of races and cultures, artifacts and institutions.

Half course. Second semester. Tu. Th., 2.

MR. WARMAN

39b. *Presentation Techniques of Geographic Material*. A methods course for graduate students who plan to teach on secondary, college, and university levels. Non-credit course.

Hours to be arranged. MR. VAN VALKENBURG AND MR. WARMAN

300. *Ph.D. Seminar.* To be arranged.

MR. VAN VALKENBURG

311b. *Oceanography.* The study of the Oceans from the standpoint of the great basins, their inherent characteristics and their economic worth. Non-credit course.

Not to be offered 1957-58.

314. *Regional Physiography of Western Hemisphere.* A study of selected areas within the major physiographic regions. Laboratory interpretation of maps, aerial photographs, block diagrams.

Two hours of lecture and two hours of laboratory weekly.

Through the year. Tu. Th., 9 (Th., 3-5 Lab.). MR. LOUGEE

Offered in alternate years. To be offered 1957-58.

315. *Regional Physiography of the Eastern Hemisphere.* A study of selected areas within the major physiographic regions. Laboratory interpretation of maps, aerial photographs, block diagrams.

Two hours of lectures and two hours of laboratory weekly.

Through the year. Tu. Th., 9 (Th., 3-5 Lab.). MR. LOUGEE

Offered in alternate years. To be offered 1957-58.

333b. *Biogeography.* Geographical significance of character, function, distribution, and relationships of plant and animal forms and societies in their adjustments to environment.

Two hours. Second semester. W., 2-4.

Offered in alternate years. To be offered 1957-58.

352. *Geography of American Agriculture.* An appraisal of the changing and changed pattern of agriculture in the United States including map revisions and most recent graphic materials available.

Through the year. Tu. W., 1.

MR. HIGBEE

Offered in alternate years. To be offered 1957-58.

361. *Urban Geography.* The modern city from the viewpoint of geography. Particular emphasis is placed on the American city.

Two hours. Through the year. Tu. Th., 11. MR. MURPHY

391b. *Cartographic Presentation of the Geographical Landscape.*

Half course. Second semester.

MR. RAISZ

399a. *Field Methods and Studies.* Required of every graduate student.

First three weeks of every year.

THE STAFF

RESEARCH COURSES

(Under direction of proper staff members)

- 200. *Geography in Education*
- 310. *Regional Physiography*
- 320. *Climatology*
- 330. *Soils and Biogeography*
- 340. *Land Utilization*
- 350. *Agricultural Geography*
- 360. *Economic Geography*
- 360b. *Urban Geography*
- 370. *Human Geography and Demography*
- 380. *Regional Geography*
- 390. *Political Geography*

Department of Geology

INSTRUCTOR LINGNER

PRIMARILY FOR UNDERGRADUATES

12. *General Geology*. A course describing the structure and rock formations of the earth. In the first semester the emphasis will be placed upon the effect of forces at work on the earth's surface (Physical Geology); the second semester will deal with the evolution of landscapes through geologic time (Historical Geology).

Three lectures and one laboratory period or field excursion weekly.

Indivisible course.

Through the year. M. W. F., 8; Th., 2.

MR. LINGNER

121a. *Introductory Mineralogy*. A course dealing with the identification of minerals by their geometric, physical, and chemical properties. Principles of Crystallography and techniques of analysis are also taught.

Half course. First semester. Two afternoon meetings weekly.

Not to be offered 1957-58.

122b. *Economic Geology*. A study of the major useful mineral deposits, their origin, structural relations and geographic distribution. Includes principles of Petroleum and Coal Geology.

Half course. Second semester. Two afternoon meetings weekly.

Not to be offered 1957-58.

Department of German

PROFESSOR ARNDT, ASSOCIATE PROFESSOR EDWARDS

REASONS FOR THE STUDY OF GERMAN

*Nescire quid antea quam natus sis
acciderit, id semper est esse puerum.*
Cicero (106-43 B.C.)

Not to know what came to pass
before you were born, is always to
remain a child.

*Wer nicht von dreystausend Jahren
Sich weiss Rechenschaft zu geben,
Bleib im Dunkeln unerfahren,
Mag von Tag zu Tage leben.*

Goethe (1749-1832)

Whoever cannot account to himself
for 3000 years of time, let him live
from day to day, an inexperienced
man groping in the dark.

Many centuries of a carefully fostered tradition of study, meditation, and research for the advancement of human learning have made the German language a great storehouse of information for almost all branches of human knowledge, and the soul of one of the greatest of Western cultures. For the intellectually curious American of our time, whether he plans a career as scientist, philosopher, theologian, professional soldier, technician, educator or public servant, the study of German will provide an almost indispensable insight into the intellectual, psychic, religious, political and economic life, especially of East and West Germany, Austria, and Switzerland, the crucial areas of past, present and future international conflicts, and the home of thousands of American soldiers for over a decade. As a command of the German language was considered one of the marks of an educator man in the time of the first flowering of New England, so it remains a most important study in our internationally far more complicated contemporary world.

DEPARTMENTAL OBJECTIVES

Out of an awareness of the important position of German areas for our country in peace or war, the Department of German offers a program of courses having the fourfold objective: 1, facility in the use of the German language (11, 12, 13, 132); 2, a comprehension of the outstanding cultural epochs in German history (141); 3, an integrated knowledge of major German writers and thinkers (152, 153, 162, 165); 4, an understanding of American

and German relations in the past and present (200). Concentration in German as the mother tongue of the Central European geographical areas, provides an indispensable background for an intelligent understanding of American interests in Europe, for work in international relations, and in most scientific fields.

COMPREHENSIVE EXAMINATIONS AND MAJORS

Each major in the Department will be required to complete certain extra-curricular reading assignments given in a departmental reading list designed to aid the student in reaching the fourfold objective outlined above. All students wishing to major in German should see the head of the department before they register.

EXTRA-CURRICULAR ACTIVITIES

The department sponsors the following organizations:

THE GERMANIC SOCIETY, an organization of students which provides an informal meeting ground for all those interested in the German language and culture. Its programs are regularly announced on the bulletin board and in the student newspaper.

DELTA PHI ALPHA, a chapter of the national honorary German fraternity. Outstanding students of German who have demonstrated their interest in the German language and culture may be invited to become members of the fraternity upon the nomination of the department.

Courses in German

During the academic year 1956-57 the following courses were given: 11, 12, 13, 132, 141, 153.

11. *Introductory German.* The regular first year course in German meeting three hours a week through the academic year. Study of pronunciation, vocabulary, elements of grammar, composition, and reading of suitable modern German prose.

Indivisible course.

Through the year.

MR. ARNDT, MR. EDWARDS

12. *Intermediate German.* The regular second year course in German meeting three hours a week through the academic year. Review of first year grammar, translation from and into German,

exercises in written and oral composition, reading of modern German prose.

Prerequisite: German 11 or two years of high school German.
Indivisible course.

Through the year.

MR. ARNDT, MR. EDWARDS

13. *Advanced German Reading.* The regular third year course in German meeting three hours a week through the academic year. This course completes the undergraduate language requirement in German. In the first semester: reading of advanced German prose. In the second semester students will be introduced to the reading of contemporary scientific and literary German journals and newspapers.

Prerequisite: German 12.

Through the year.

MR. ARNDT, MR. EDWARDS

132. *Oral and Written German.* Practice in writing German letters, study of modern prose as a basis for practice in the oral use of the language. May be offered to complete language requirement in German.

Prerequisite: German 12.

Through the year.

141. *Germanic Civilization.* An illustrated lecture course in English on the literature, history, and the fine arts of the German lands from the Holy Roman Empire to the present day, with special stress laid upon the Reformation, the Age of Enlightenment and the Classical Period.

Through the year.

MR. EDWARDS

152. *German Literature I.* A survey of German literary movements from the earliest times to the end of the Classical Period.

Through the year.

MR. ARNDT

Alternates with course 153.

153. *German Literature II.* A survey of German literary movements from the beginning of the Romantic Period to the present.

Through the year.

MR. ARNDT

Alternates with course 152.

162a. *Faust.* Goethe's *Faust* (both parts) as the highest poetic development of the Faust legend.

Half course. First semester.

MR. ARNDT

165. *Modern German Drama.* The German drama from 1880 to the present.

Half course. Second semester.

MR. ARNDT

200b. *German Seminar*. For German majors in their senior year. The work of the seminar will vary from year to year according to the needs of the students.

Half course. Second semester.

MR. ARNDT

Department of History, Government and International Relations

PROFESSOR LEE, PROFESSOR JORDAN, ASSOCIATE PROFESSOR HAYDEN,

ASSOCIATE PROFESSOR CAMPBELL,* ASSOCIATE PROFESSOR

COHEN, ASSISTANT PROFESSOR RAEFF, MR. BASS

UNDERGRADUATE WORK

In its undergraduate program the department gives basic courses in the fields of American, European, and British history, American and European government, and international relations. It offers departmental majors in history or government, and participates in the interdepartmental major programs: International Relations and American Civilization.

General Education 14 must be taken as early as possible by all majors in the department. Other courses primarily for undergraduates may be elected by non-majors who have not previously taken G.E. 14; and courses for advanced and graduate students may be taken by non-majors with the permission of the instructor if in his judgment the student has an adequate background for the course. Majors will normally take Economics 11 as well as G.E. 14 before the end of the sophomore year. Majors in government will normally take Government 15 before the end of the sophomore year. Further elections in this and related departments are determined by the major's special interests, but are expected to include at least two upper class courses in this department. History 205a and b is required of all majors in the department.

GRADUATE WORK

The distinctive feature of the graduate work is the emphasis laid upon individual instruction and guidance by means of informal

* Absent on leave, 1956-57.

conferences between instructor and student, small classes, and seminars. The principal fields of graduate study are American, English and European history and politics, modern diplomacy, and the international relations of the United States, Europe, the British Empire and the Far East.

The program for the degree of Master of Arts is worked out individually with each student who may choose to concentrate upon history, or government, or international relations. All are required to take the departmental seminar (History 30a). For general requirements, see the announcement of the Graduate School.

For the degree of Doctor of Philosophy, which may be taken in history or international relations, each student must choose six fields of study to be agreed upon as early as possible in the first year of residence beyond the M.A., and after a conference between the student and the departmental staff. By the end of the same year the student is expected to complete satisfactorily two of his fields, either by course work or by passing a three-hour written examination in each field; and to complete, normally by enrollment in a seminar or similar course, a task of research and writing. In the second year beyond the M.A., or later, the student must complete the remaining four fields, one or two by course or written examination, and the others by an oral examination given by the staff and at least one member of the Graduate Board from another department. This final step constitutes the "preliminary examination" required by the Graduate Board. For language and other requirements, see the announcement of the Graduate School concerning the doctorate.

The doctoral dissertation, written in one of the six fields which is designated as the special field, must be submitted in complete preliminary draft to the supervising instructor not later than March 1 of the year in which the candidate hopes to receive the degree. The final examination for the doctorate tests the candidate's expert knowledge of his special field as well as the relation of his dissertation to it.

International Relations. The procedures toward advanced degrees in this subject are outlined above. Candidates are expected, however, to take work in economics and geography as part of an integrated program to be arranged by the department in consultation with the other departments concerned.

Courses in History

During the academic year 1956-57 the following courses were given: General Education 14, History 12, 20b, 201b, 205a, 205b, 212, 23, 230, 232, 281a, 284a, 30, 314a, 331.

1. PRIMARILY FOR UNDERGRADUATES

General Education 14. Europe and the United States since 1500. For a complete description of this course, see *General Education*.

Required of all majors in the department.

Through the year. Tu. Th., 9; F., 1.

12. *History of England.* A general introduction.

Through the year. M. W. F., 11.

MR. JORDAN

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

20b. *Senior Conference.* Required of all seniors as part of their preparation for the comprehensive examinations. A list of required readings forms the basis for discussion which is intended to correlate and review the fields of history and government.

Half course. Second semester. M., 3:25-4:40. MR. LEE AND STAFF

201b. *Intellectual History of Europe from 1600 to 1789.* Analysis and discussion of the major contributions to Western ideas and attitudes during the Ages of the Baroque and the Enlightenment.

Half course. Tu., 8-10 p.m.

MR. RAEFF

Offered in alternate years. Not to be offered in 1957-58.

205a. *Introduction to Political Philosophy.* A study of the main trends of Western political thought with reference to their underlying social, political and economic realities. Required of all departmental majors.

Half course. First semester. Tu. Th., 8; F., 2.

MR. JORDAN

205b. *Recent Political Thought.* The conflicting ideologies of our time in their development since the French Revolution. Marxism, Fascism, and Nazism will be analyzed with especial reference to their challenge to liberal democracy. Required of all departmental majors.

Half course. Second semester. Tu. Th., 8; F., 2.

MR. JORDAN

21. *Foundations of Modern Europe.* Following an introductory survey of medieval history, the course will emphasize the Renaissance and Reformation to the second half of the 16th century.

Through the year. M. W., 2-3:15.

MR. LEE AND MR. RAEFF

Offered in alternate years. Offered 1957-58.

212. *Europe, 1789-1914*. With emphasis upon political and international developments.

Through the year. T. Th., 10-11:15.

MR. LEE

22b. *Tudor and Stuart England*.

Half course. Second semester.

MR. JORDAN

Offered irregularly.

225a. *Recent History of the British Empire*. The course will deal with developments and problems since 1900.

Half course. First semester. T. Th., 9; F., 1.

MR. JORDAN

Offered in alternate years. To be offered 1957-58.

23b. *Senior Conference in American Civilization*. Required of all seniors as part of their preparation for the comprehensive examinations in American Civilization. Readings, papers and discussions will help the students review and integrate their course work in this field.

Half course. Second semester. Th., 3-5.

MR. BASS

230. *Social and Intellectual History of the United States*. Beginning with a brief survey of the European background of American ideas and institutions, this course deals with the main currents in American thought and society from colonial times to the present.

Through the year. M. W. F., 11.

MR. BASS

232. *United States Constitutional History and Law*. A survey of the major developments in our constitutional system and law with emphasis in the second semester upon contemporary problems.

Prerequisite: History 131 or Government 15.

Through the year.

MR. BASS AND MR. COHEN

Offered in alternate years. Not to be offered 1957-58.

234a. *American Diplomatic History*. From 1783 to about 1941.

Half course. First semester. M. W. F., 9.

MR. HAYDEN

Offered in alternate years. Not to be offered 1957-58.

235a. *The United States in the Twentieth Century*. A study of the chief influences in American civilization since 1900, with special attention to the emergence of current social and economic problems.

Half course. First semester. M. W. F., 9.

Offered in alternate years.

274b. *The Modern Far East*. The course deals primarily with international relations in the region since 1895.

Half course. Second semester. M. W. F., 9.

MR. HAYDEN

Offered in alternate years. Not to be offered 1957-58.

281. *History of Russia (from the origins to the Soviet system)*.

Special attention is given to the development of the Russian state and society and to the ideological preparation of the Revolution.

Through the year.

MR. RAEFF

Not to be offered 1957-58.

282b. *History of the Soviet System*. Major emphasis is laid on the process of consolidation and transformation of the Soviet system after its establishment in 1917.

Half course. Second semester.

MR. RAEFF

Offered in alternate years. Not to be offered 1957-58.

283a. *Historical Development of Eastern Central Europe*.

Half course. First semester.

MR. RAEFF

Offered in alternate years. Not to be offered 1957-58.

284a. *Topics in East European History*. Seminar course on selected problems in the social, intellectual, and political history of Eastern Europe since the 17th century.

Half course. First semester. M., 3:30-5:30.

MR. RAEFF

Offered irregularly. Not to be offered 1957-58.

3. PRIMARILY FOR GRADUATE STUDENTS

30a. *Department Seminar*. Introduction to bibliography and methods of research.

Required of all first-year graduate students in the department.

Half course. First semester. W., 4-6.

MR. LEE AND THE STAFF

314a. *European International Relations, 1870-1918*.

Half course. First semester. Th., 3:30-5:30.

MR. LEE

331. *Problems in the History of the United States*. Individual research topics, supplemented by readings and discussion in the field of United States history.

Through the year. Tu., 3:30-5:30.

MR. BASS

GRADUATE READING AND THESIS COURSES

31. Reading	} <i>In the History and International Relations of Europe.</i>	MR. LEE
310. Thesis		

32. Reading	} <i>In the History and International Relations of England and the British Empire.</i>	MR. JORDAN
320. Thesis		

33. Reading	} <i>In the History of the United States.</i>	MR. BASS
330. Thesis		

38. Reading	} <i>In Early Modern and Slavic History.</i>	MR. RAEFF
380. Thesis		

Courses in Government

During the academic year 1956-57, the following courses were given: Government 15, 24, 240, 241, 251a, 351.

1. PRIMARILY FOR UNDERGRADUATES

15. *Introduction to American Government.* A short survey of the theories of the origin and purpose of the state is followed by a study of the functioning of the government of the United States with emphasis on contemporary problems of the federal government.

Through the year. M. W. F., 9.

MR. COHEN AND MR. KRIVY

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

24. *International Relations.* A survey of the course of world politics since 1914, with emphasis on the shifting patterns of power and the rise of new nations and revolutionary doctrines. Special attention is given in the second semester to the Second World War and its consequences.

Through the year. Tu. Th., 9; F., 1.

MR. HAYDEN

To be offered 1957-58 as Government 14.

240. *Seminar in International Relations.* Group study of certain problems in contemporary affairs. Required of seniors in the international relations major; open as an elective only with the instructor's permission.

Through the year. Tu., 3:20, and conferences.

MR. HAYDEN

241. *International Law and Organization.* First semester: the historic principles of international law and their application in the modern world. Second semester: an examination of the institutions created to deal with problems of commerce, social welfare, and collective security on an international basis.

Through the year.

MR. HAYDEN

Offered in alternate years. Not to be offered 1957-58.

25a. *Comparative Government.* The governments and politics of Great Britain and the major European powers.

Half course. First semester. M. W. F., 11.

MR. COHEN

Offered in alternate years. To be offered 1957-58.

251a. *American Political Parties.* A study of the functioning of American party organizations, pressure groups, and the electorate in American politics. Emphasis is placed upon current problems and trends in the field.

Half course. First semester. M. W. F., 10.

MR. COHEN

Offered in alternate years. Not to be offered 1957-58.

History 232. United States Constitutional History and Law. See courses in History.

MR. BASS AND MR. COHEN

252b. *Introduction to Public Administration.* An introductory examination of the role of administration in modern government, including problems of personnel administration, fiscal management, administrative regulation and government organization.

Half course. Second semester. M. W. F., 11.

MR. COHEN

Offered in alternate years. To be offered 1957-58.

3. PRIMARILY FOR GRADUATE STUDENTS

History 30a. Department Seminar. See courses in History.

341. *Problems in International Relations.*

Through the year. Hours to be arranged.

MR. HAYDEN

To be offered 1957-58.

351. *Problems in American Government.* A study primarily by means of student research and discussion of selected contemporary problems in American government, including the legislative process, public opinion, and political parties.

Through the year. Hours to be arranged.

MR. COHEN

GRADUATE READING AND THESIS COURSES

34. *Reading*

340. *Thesis*

} *In International Relations.*

MR. HAYDEN

35. *Reading*

350. *Thesis*

} *In American and Comparative Government and Politics.*

MR. COHEN

Interdepartmental Majors

To provide undergraduate "majors" in certain fields which are intrinsically worthwhile culturally or professionally but which cross departmental boundaries, the Faculty has authorized a group of "interdepartmental majors."

At present two programs are offered under this plan:

I. International Relations

II. American Civilization

A description of these majors will be found at the beginning of the section "Departments and Courses" in this catalog.

International Relations

See the announcement of the Department of History, Government and International Relations.

An "interdepartmental major" in the field of International Relations is offered to candidates for the degree of Bachelor of Arts. The program required for the completion of this major is fully outlined under the earlier heading *Interdepartmental Majors*.

Department of Mathematics

PROFESSOR BUMER, ASSOCIATE PROFESSOR STUBBE,
ASSOCIATE PROFESSOR GORENSTEIN

UNDERGRADUATE WORK

The department of mathematics offers courses leading to an undergraduate major in mathematics, courses necessary for the study of the physical sciences and courses for the student who wishes to learn about the fundamental concepts of mathematics primarily for their cultural value.

Courses 11, 12, 13 and 214 form the basis of a major in mathematics and are important for the study of the physical sciences. A major in mathematics normally includes one course in mathematics in addition to the four courses above and two courses in an allied field of study such as physics, chemistry or philosophy.

GRADUATE WORK

The department offers advanced courses leading to the degree of Master of Arts. The program in mathematics is designed to give the student an understanding of the basic concepts of the major fields of mathematics and to fit him for further work in the subject if his talents warrant it.

The offerings should provide the student with essential training in mathematics necessary for positions in the scientific laboratories of government and industry and should be of great value to teachers.

Graduate assistantships are available.

Courses in Mathematics

During the academic year 1956-57 the following courses were given: Mathematics 11, 12, 13, 214, 218, 219.

1. PRIMARILY FOR UNDERGRADUATES

11. *Freshman Mathematics*. Careful attention is given to fundamental concepts and to the development of useful techniques. Topics in algebra, trigonometry and analytical geometry are introduced.

A qualified student may request permission to take an attainment test in the subject matter of course 11. If he passes such a test he may enter course 12.

Through the year. M. W. F., 9; M. W., 2; F., 3; Tu. Th., 10; M. 1.

MR. BUMER AND ASSISTANTS

12. *Introduction to Calculus*. Course 12 introduces both the differential and integral calculus and is essential to further work in mathematics as well as to work in the natural sciences.

Prerequisite: Course 11 or its equivalent.

Through the year. M. W. F., 9; Tu. Th., 10; M., 1.

MR. STUBBE AND MR. GORENSTEIN

13a. *Intermediate Calculus*. This course includes a discussion of geometric and physical applications of integration, sequences and series, partial differentiation and double integrals.

Prerequisite: Course 12.

To be offered first semester. M. W. F., 10.

MR. STUBBE

13b. *Differential Equations*. Ordinary differential equations are studied with applications to geometry, physics, chemistry and mechanics.

Prerequisite: Course 12.

To be offered second semester. M. W. F., 10.

MR. STUBBE

17. *Mathematical Statistics*. Topics discussed include the elements of probability theory, frequency distributions, tests of significance, correlation theory of large and small sampling.

Prerequisite: Course 12.

Through the year. M. W. F., 11.

MR. BUMER

Offered in alternate years. To be offered 1957-58.

General Education 110. Fundamental Concepts of Mathematics.

For description of this course, see courses listed under General Education.

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

214. *Advanced Calculus*. The following topics are studied: Partial differentiation, multiple and line integrals, infinite series, Fourier series, elements of analysis.

Prerequisite: Course 12.

Through the year. M. W. F., 11

MR. GORENSTEIN

215. *Modern Algebra*. This course offers an introduction to the theory of groups, rings, integral domains, fields, vector spaces, matrices and related topics.

Prerequisite: Course 12.

Through the year. M. W. F., 11.

MR. STUBBE

216. *Introduction to Complex Variables*. This course is an introduction to analytic functions, line integrals, conformal mapping.

Prerequisite, or to be taken concurrently: Course 214.

Offered in alternate years. To be offered 1957-58. MR. BUMER

218. *Real Variables*. The following topics are studied: Point sets, sequences, certain theorems on functions of a real variable, measure and the Lebesgue integral.

Prerequisite or taken concurrently: Course 214.

Through the year. M. W., 1; F., 12.

MR. BUMER

Offered in alternate years. Not to be offered 1957-58.

219. *Projective Geometry*. Synthetic and analytic projective geometry are studied, including the projective theory of conics.

Prerequisite: Course 12.

Through the year. M. W. F., 3.

MR. GORENSTEIN

Offered in alternate years. Not to be offered 1957-58.

220a. *Theory of Numbers*.

Prerequisite: Course 12

MR. STUBBE

Offered first semester 1956-57.

220b. *Advanced Differential Equations*. Certain partial differential equations of mathematical physics. Fourier series and boundary value problems, systems of ordinary differential equations are studied.

Prerequisite: Course 13b.

221. *Topology*. Point set topology, metric spaces, dimension theory, introduction to algebraic topology are included in this course.

Through the year.

MR. HAYDEN

The content of courses 220a, 220b, and 221 will be changed from year to year to fit the needs of graduate students.

Department of Philosophy

PROFESSOR JEFFERSON, ASSOCIATE PROFESSOR BECK,

LECTURER HARTMAN

The Department of Philosophy offers courses designed to broaden the student's perspective and help him trace the relations among the various fields of knowledge. These courses may also form the basis of a major in philosophy.

A major in this department consists of four courses in philosophy and three additional courses in related fields. The specific courses in related fields are determined in the light of the student's special interests.

Courses in Philosophy

During the academic year 1956-57 the following courses were given: 11a, 11b, 12, 13a, 13b, 15.

Philosophy 11a. Logic and Scientific Method. The principles of valid reasoning and inductive methods; the application of these principles and methods to the problems of the natural and social sciences, and the consideration of the relation between logic and problems of value.

Open to freshmen.

Half course. First semester. M. W. F., 8.

MR. BECK

Philosophy 11b. Problems of Philosophy. The nature and method of philosophy. The application of philosophical method to contemporary personal and social problems. A detailed analysis of some typical problems in the various fields of philosophy.

Open to freshmen.

Half course. Second semester. M. W. F., 8.

MR. BECK

Philosophy 12. History of Philosophy. The movements of philosophical thought from the early Greeks to the present day. First semester: Greek and Medieval Philosophy. Second semester: Modern Philosophy.

Not open to freshmen.

Divisible course, with consent of the instructor.

Three hours, through the year. M. W. F., 9.

MR. JEFFERSON

Philosophy 13a. Problems of Ethics. A constructive study of important ethical theories. Designed to acquaint the student with

the problems and scope of ethics, and to aid him in the formulation of an ethical outlook.

Open to juniors and seniors.

Half course. First semester. W. F., 11.

MR. BECK

Offered in alternate years. Not to be offered 1957-58.

Philosophy 13b. Types of Religious Philosophy. The religious ideas and ideals of Western civilization and their embodiment in specific religious institutions.

Open to juniors and seniors.

Half course. Second semester. W. F., 11.

MR. HARTMAN

Offered in alternate years. To be offered 1957-58.

Philosophy 14a. Social Philosophy. The principles underlying social structure and functions. The examination of the goals, purposes, norms, and ideals of social process, and the relation of that process to the individual good.

Open to juniors and seniors.

Half course. Second semester. W. F., 11.

MR. BECK

Offered in alternate years. To be offered 1957-58.

Philosophy 15. Contemporary Philosophy. An intensive study of important thinkers representative of modern developments in philosophy, together with emphasis on the historical roots of their thought.

Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor.

Divisible course.

Through the year. Tu. Th., 2.

MR. BECK

Offered in alternate years. To be offered 1957-58.

Philosophy 16a. Readings in Ancient Philosophy. Advanced work in the writings of one or more of the important philosophers of the ancient period.

Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor.

Half course. First semester. M. W., 2.

MR. BECK

Offered in alternate years. To be offered 1957-58.

Philosophy 16b. Readings in Modern Philosophy. Advanced study of representative thinkers of the modern period.

Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor.

Half course. Second semester. M. W., 2.

MR. BECK

Offered in alternate years. To be offered 1957-58.

Education 290b. Philosophy of Education described in the announcement of the Department of Education.

Department of Physics

PROFESSOR ROOPE, ASSOCIATE PROFESSOR GUNTER

UNDERGRADUATE WORK

The department offers fundamental courses required in preparation for the study of chemistry, biology, meteorology and allied sciences, medicine, dentistry, engineering and science teaching, as well as courses leading to professional or graduate work in physics.

The requirement for a major in physics consists of Physics 11, two courses from Physics 15, 16, 17, 124, either Physics 22 or 23, Mathematics 11 and 12, and Chemistry 11. In addition, electives in physics, mathematics and chemistry are desirable. Students preparing for graduate work should also obtain a good reading knowledge of French and German while in college.

Physics 11 or its equivalent is the normal prerequisite for all other courses in the department. Courses numbered 15 or higher, except 17 and 124, require the use of calculus and should not be elected without consulting the instructor in charge. Courses 15, 17 and 23 each require a limited amount of laboratory work to be done at the discretion of the instructor and at such times as will not interfere with regularly scheduled courses.

GRADUATE WORK

Students whose records are approved by the department may be admitted by the Graduate Board to work leading to the degree of Master of Arts.

Courses in Physics

During the academic year 1956-57 the following courses were given: 11, 17, 124, 22, 26, 28b, 129, 31, 300, and General Education 10.

During the academic year 1957-58 the following undergraduate courses will be offered: 11, 15, 16, 17, 23, 24, 25, 26, and General Education 10.

1. PRIMARILY FOR UNDERGRADUATES

General Education 10. An Introduction to Physical Science. For description of this course see courses listed under General Education.

11. *General Physics*. Mechanics, heat, electricity and magnetism, wave motion, sound, and light.

Indivisible course.

Open to freshmen.

Through the year. Tu. Th., 9; F., 1; M. or Th., 2. MR. GUNTER

13. *History of Physics*.

MR. ROOPE

Offered irregularly.

15. *Heat and Thermodynamics*. This course includes a study of thermometry, calorimetry, the thermal properties of matter in the solid, liquid and gaseous states, the laws of thermodynamics, and applications to a wide range of phenomena.

Prerequisites: Physics 11 and Mathematics 12.

Through the year. M. W. F., 11.

MR. ROOPE

Offered in alternate years. To be offered 1957-58.

16. *Optics*. The first semester is devoted to a study of the principles of geometrical optics and their application to various optical instruments, including ground and aerial cameras. The second semester is devoted to the principles and application of physical optics.

Prerequisites: Physics 11 and Mathematics 12 (may be taken concurrently).

Through the year. Tu. Th., 8; Tu. 2.

MR. GUNTER

Offered in alternate years. To be offered 1957-58.

17. *Introduction to Modern Physics*. An elementary treatment of physical experiment and theory of the past sixty years including the more recent atomic and nuclear developments.

Through the year. M. W. F., 9.

MR. ROOPE

124. *Fundamentals of Electronics*. This is a first course in electronics designed to give a broad, largely non-mathematical, background for the understanding of electron tubes and their associated circuits. The application of modern electronic devices to the fields of physics, chemistry, biology, meteorology, and navigation is discussed.

Prerequisite: Mathematics 11.

Through the year. Tu. Th., 8; Tu., 2.

MR. GUNTER

Offered in alternate years. Not to be offered 1957-58.

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

22. *Theoretical Mechanics*.

Prerequisite: Mathematics 12. Mathematics 13 is desirable but not required.

Through the year. W. F., 11-12:15.

MR. ROOPE

Offered in alternate years. Not to be offered 1957-58.

23. *Electricity and Magnetism.* The fundamental laws of electric and magnetic circuits and fields are treated. The elements of electromagnetic wave propagation and their application to antenna design are included in this treatment.

Prerequisites: Physics 11 and Mathematics 12. Mathematics 13 is desirable but not required.

T. Th., 11-12:15. Laboratory hours to be arranged. MR. GUNTER

Offered in alternate years. To be offered 1957-58.

24. *Advanced Electronics.* This course is a detailed theoretical study of certain electronic phenomena from a mathematical point of view.

Prerequisites: Mathematics 12 and Physics 124 or Physics 23. Mathematics 13 is desirable but not required.

Through the year.

MR. GUNTER

Offered irregularly.

28a. *Theoretical Spectroscopy.* The origin of line and band spectra in both emission and absorption spectrophotometry is treated.

Prerequisites: Physics 11 and Mathematics 12 (may be taken concurrently). Physics 16 and 17 are desirable but not required.

Half course. First semester.

MR. GUNTER

Offered in alternate years. Not to be offered 1957-58.

28b. *Experimental Spectroscopy.* The theory and applications of the optical and electrical instruments used in an experimental spectroscopy are discussed. The student will become familiar with the use of prism and grating spectrographs, micro-densitometers, interferometers, and their associated photographic and electrical techniques. The principles of spectrochemical analysis are included in this course.

Prerequisites: Physics 16 or Physics 28a, and Mathematics 12 (may be taken concurrently). Physics 17 is desirable but not required.

Half course. Second semester. Tu., 11; Tu. Th., 2. MR. GUNTER

Offered in alternate years. Not to be offered in 1957-58.

25. *Honors Course.* Theoretical and/or experimental work in mechanics, thermodynamics, or nuclear physics. MR. ROOPE

26. *Honors Course.* Theoretical and/or experimental work in optics, electronics, or spectroscopy. MR. GUNTER

29. *Topics in Advanced Optics.* Topics in advanced optics are studied covering both theoretical and experimental aspects. The topics are selected from the following: spectroscopy, polarimetry, communication theory, diffraction theory, lens design, and electro-optics.

Prerequisites: Mathematics 13 and Physics 16. Physics 23 desirable.

Through the year. T. Th., 10-11:15. Laboratory arranged.

MR. GUNTER

Offered in alternate years. Not to be offered in 1957-58.

217. *Nuclear Physics.*

MR. ROOPE

3. PRIMARILY FOR GRADUATE STUDENTS

31. *Theoretical Physics.* Double Course.

MR. ROOPE

300. *Research in Experimental Physics.*

THE STAFF

301. *Research in Theoretical Physics.*

THE STAFF

Department of Psychology

PROFESSOR WERNER, PROFESSOR WAPNER, PROFESSOR AFFILIATE PHILLIPS, PROFESSOR AFFILIATE WEINREB, ASSOCIATE PROFESSOR DEMBO, ASSOCIATE PROFESSOR GWINN, ASSOCIATE PROFESSOR LAZARUS, ASSOCIATE PROFESSOR MEYER-TAYLOR, ASSISTANT PROFESSOR BAKER, ASSISTANT PROFESSOR CROCKETT, ASSISTANT PROFESSOR DIBNER, ASSISTANT PROFESSOR KAPLAN, ASSISTANT PROFESSOR LEVENTHAL, ASSISTANT PROFESSOR WINDER, LECTURER COMALLI, LECTURER FEFFER, LECTURER GOODGLASS, LECTURER LANE, LECTURER LIPTON, LECTURER RAEFF

The Psychological laboratories at Clark University were established by G. Stanley Hall immediately after the founding of the University, and constituted one of the first adequately appointed laboratories in this field in America. These laboratories increased rapidly in size and in research possibilities for experimental psychology, and have been remodeled in accordance with present needs. From the outset this research emphasis on experimental psychology was supplemented by work in child study, educational psychology, and mental hygiene. In recent years a comprehensive

training program in clinical psychology has been added. Broad integrated training in psychology is stressed, with special concentration being provided in the areas of child and genetic, clinical, experimental approaches to personality and psychopathology and general experimental psychology.

UNDERGRADUATE WORK

The undergraduate curriculum is designed to meet the needs of: (1) students majoring in psychology; (2) majors in related fields; (3) students wishing an orientation to the field of psychology for general cultural development.

Psychology 11a and 11b are prerequisite to all subsequent courses. Majors are required to take Psychology 11a, 11b, and Psychology 212. Students preparing for graduate work should obtain a reading knowledge of French and German.

GRADUATE WORK

Work is offered in the department leading to the degrees of Master of Arts and Doctor of Philosophy. In order to be admitted to the department for a graduate degree, the applicant must have a bachelor's degree, based upon a distinguished college record. Where the department feels that a student lacks the necessary undergraduate preparation in psychology and related fields, specific courses of study will be prescribed.

THE DEGREE OF MASTER OF ARTS. To qualify for the degree of Master of Arts in psychology the student must demonstrate competence in representative areas of psychology. The customary program is five courses, including experimental psychology, statistical methods, and three additional courses supplemented by the writing of a thesis in the area of special interest.

THE DEGREE OF DOCTOR OF PHILOSOPHY. Only students who give evidence of high scholastic attainments will be encouraged to proceed to the degree of Doctor of Philosophy. The obtaining of a Master of Arts degree does not automatically admit the student to the doctoral program. The general requirements for the doctor's degree, other than those for specialization in clinical psychology, include the following. The student is required to pass with distinction four courses during the first year of graduate study and a mini-

num of four courses during the second year of study. At the end of the second year he is required to demonstrate his competence in psychology by passing with distinction preliminary examinations in the field of psychology as a whole and in an area of specialization. At the present time examinations in the general field include history and systems of psychology, experimental psychology, genetic psychology, learning, normal and abnormal personality, social psychology, physiological psychology, and statistics. In addition, the student is required to demonstrate his ability to conduct independent research as evidenced by the presentation of an acceptable thesis. For formal thesis requirements and language requirements, see the general statement concerning advanced degrees in the section of this catalog headed "The Graduate School." At a final oral examination a student is required to defend his thesis and to show his competence in the general field of psychology and in his special area of concentration.

THE PROGRAM IN CLINICAL PSYCHOLOGY. The department offers a four-year program in clinical psychology leading to the degree of Doctor of Philosophy. For this degree the same standards of proficiency in the general field of psychology as mentioned above apply.

In addition the student will be required to demonstrate mastery of the use of clinical methods. Provision is made for a wide variety of practical experiences in cooperating institutions, clinics and agencies. V.A. and U.S. Public Health Service Training Stipends are available for outstanding students.

One to two years of internship, or its equivalent, is included in this four-year program. Institutions and agencies cooperating in providing practicum and research facilities are: Bradley Home, Bedford V.A. Hospital; Boston State Hospital; Boston V.A. Hospital; Boston V.A. Mental Hygiene Clinic; Brockton V.A. Hospital; Children's Medical Center, Boston; Clark University Psychological Clinic; Hartford V.A. Mental Hygiene Clinic; Judge Baker Guidance Center, Boston; Lowell V.A. Mental Hygiene Clinic; Northampton V.A. Hospital; Providence V.A. Mental Hygiene Clinic; Rutland Heights V.A. Hospital; Worcester Youth Guidance Center; and the Worcester State Hospital. Internships may be arranged in other selected hospitals and clinics.

During the first two years the student will include in his program courses basic to a thorough understanding of psychology as well as

specialized courses in clinical psychology. He will be required to take the regular preliminary examinations; in this case the examination in the area of specialization will be in clinical psychology.

Research for the dissertation should normally be completed during the fourth year at the University. The length of the program will vary depending upon individual circumstances.

1. PRIMARILY FOR UNDERGRADUATES

11a. *General Psychology*. An introduction to the principles of human behavior.

Half course. First semester. M. W. F., 10. MR. WAPNER

11b. *General Psychology*.

Prerequisite: Psychology 11a.

Half course. Second semester. M. W. F., 10. MR. WAPNER

103b. *The Abnormal Personality*. The course will be devoted to a study of the development of the abnormal personality and a survey of the major types of abnormal behavior.

Prerequisite: Psychology 172a.

Half course. Second semester. Tu. Th., 2-3:15. MR. LAZARUS

150a. *Introduction to Child Psychology*.

Half course. Omitted 1957-58. MRS. RAEFF

151b. *Psychology of Exceptional Children*. A psychological study of the superior, retarded, physically disabled and emotionally disturbed child. This discussion will include social and physical factors in the childrens' intellectual and personality development, and focus on specialized techniques of diagnosis, education, psychotherapy and research. Field trips.

Prerequisite: Psychology 150a or equivalent.

To be offered second semester. M. W., 2-3:15. MR. DIBNER

152b. *Psychology of Adolescence*. A study of the development of personality during adolescence. Special emphasis will be placed upon personality changes of the adolescent in a modern urbanized culture.

Prerequisite: Psychology 11a and 11b.

Half course. Omitted 1957-58. MRS. RAEFF

170. *Social Psychology*. The role of social factors in the behavior of individuals and of groups. Among the topics to be discussed are suggestion, attitudes, rumor, prejudice, leadership and public opinion polls.

Through the year. M. W. F., 8. MR. CROCKETT

172a. *Personality Development*. A survey of the various theoretical approaches to the study of personality, with particular emphasis on trait theories, typologies, field theory, and psychoanalysis. Also considered are the determinants of personality development and methods of appraising personality.

Half course. First semester. Tu. Th., 2-3:15. MR. LAZARUS

2. FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

201a. *Learning and Motivation*. The role of learning and motivation in behavior.

Half course. First semester. Tu. Th., 10-11:15. MR. GWINN

202b. *The Psychology of Thinking*. An analysis of the various types of thought processes and methods of investigating them, with emphasis on concept formation, imagination, creative thought, reasoning and problem solving.

Half course. Second semester. Tu. Th., 10-11:15. MR. GWINN

209. *Developmental and Child Psychology*. A survey of the principles of development and the problems of child psychology.

Prerequisite: Psychology 11 plus one additional semester course in psychology.

Through the year. W. F., 9. A third hour to be arranged.

MR. WERNER

212. *Experimental Psychology*. A general survey of experimental psychology with the aim of acquainting the student with scientific methods and laboratory technique.

Through the year. Lecture: M. W., 11.

Laboratory: M., 2-5.

MR. WAPNER

3. PRIMARILY FOR GRADUATE STUDENTS

300. *Genetic Psychology*. A seminar on the basic principles of genetic psychology.

Through the year. F., 10-12. MR. WERNER AND MR. KAPLAN

301. *Clinical Assessment I*. An introduction to problems and methods with field work.

Through the year. F., 1-3. MR. LEVENTHAL

302. *Advanced Psychological Diagnosis of Children*. Special problems and case studies.

Through the year. W., 3-5. MRS. MEYER-TAYLOR

303. *Clinical Assessment II*. Advanced course dealing with diagnostic methods and field work.

Through the year. F., 5-7. MR. GOODGLASS

304. *Concept and Method in Psychological Measurement.*

Through the year.

MR. WINDER

305. *Advanced Experimental Psychology.* A study of experimental methodology and techniques. In the first semester attention will be given to problems of perception, and, in the second semester, to memory, concept formation and reasoning.

Through the year. Lecture: Th., 9-11.

MR. WERNER

Laboratory: To be arranged.

MR. WERNER AND MR. WAPNER

306. *Seminar in Research Methods.*

Through the year. Tu., 9-11.

MR. WERNER, MR. KAPLAN, AND MR. WAPNER

307. *Participation in Psychological Clinic.*

Through the year.

MR. BAKER, MR. PHILLIPS, MR.

LEVENTHAL, MR. WEINREB, MR. LAZARUS

308a. *Psychopathology.* A survey of the major pathological syndromes and their conceptualization.

First semester. Th., 4-6.

MR. LIPTON

309b. *Theories of Psychotherapy.* A comparative study of basic theories of psychotherapy as they relate to practical approaches to patients.

Second semester. Th., 4-6.

MR. LIPTON

313. *Statistical Methods.* The purpose of this course will be to give an understanding of and practice in the statistical methods most valuable in psychological research.

Through the year. W., 3-5.

MR. LANE

315a. *Experimental Methodology and Design.* A consideration of general experimental methodology in psychology with special reference to the problems of research planning and experimental design. Various fields will be drawn upon for illustrations.

First semester. W., 1-3.

MR. WAPNER

318. *Personality.* A course in fundamental problems in personality theory and a comparison of various theoretical approaches.

Through the year. Th., 10-12.

MR. LAZARUS

320. *Social Psychology.* A survey of problems in social psychology and theoretical systems in the field.

Through the year.

MR. CROCKETT

330b. *Genetic Psychology of Symbolic Behavior.* A seminar on the basic aspects of symbolic behavior in humans.

Half course. Second semester.

MR. KAPLAN

331. *The Psychology of Learning*. Theoretical viewpoints and experiments in the field of learning.

Through the year. W., 1-3.

MR. GWINN

333. *Personality Evaluation*. An advanced course in the integration of methods of personality diagnosis and case history materials.

Through the year. F., 5-7.

MR. PHILLIPS

336. *Advanced Problems in Psychotherapy*. This course is offered only to advanced clinical graduate students who are engaged in psychotherapy. The course will consist of discussions of psychotherapeutic problems and theory in connection with case material.

Through the year. Th., 7-9 P.M.

MR. WEINREB

338a. *Clinical Neurophysiology*. The study of neurophysiological functions as they pertain to human behavior.

Sat., 1-3.

LECTURER TO BE ANNOUNCED

339a. *History and Systems of Psychology*. The historical development of psychological methods, concepts and theories.

First semester. Th., 2-4.

MR. GWINN

340b. *Physiological Psychology*. An investigation of the physiological mechanisms underlying psychological processes.

Half course. Second semester. Th., 2-4.

MR. GWINN

349. *Clinical Research Methodology*. A survey of current research methods in clinical psychology.

First semester. By arrangement.

VARIOUS MEMBERS

Second semester. By arrangement.

OF THE STAFF

350. *Research in Psychology*. Individual direction of students in their research projects.

STAFF OF THE DEPARTMENT

390. *Departmental Colloquium*.

Through the year. W., 7:45 P.M.

THE STAFF, GRADUATE STUDENTS

AND VISITING LECTURERS

NON-CREDIT WORKSHOPS

1. *Advanced Workshop in Psychological Statistics*.

Selected problems in small sample theory.

Through the year. To be arranged.

VISITING LECTURERS

2. *Workshops in Clinical Methodology*.

VISITING LECTURERS

3. *Workshop in Neuropsychology*. Problems concerning neurological correlates of behavior.

Second semester. Sat., 1-5 P.M.

VISITING LECTURER

Department of Romance Languages

PROFESSOR REID, ASSOCIATE PROFESSOR NICOL, ASSOCIATE
PROFESSOR KING, ASSISTANT PROFESSOR BARBERA

Courses offered in the languages and literatures of France, Spain, and Spanish America have been planned to provide:

- 1) an adequate foundation for graduate study or teaching either French or Spanish, or both;
- 2) a thorough reading knowledge of both languages, essential for carrying on advanced study in natural sciences, social sciences, and the humanities, and for fulfilling the language requirement for the degree of Bachelor of Arts;
- 3) a competent speaking knowledge of both languages.

A major in Romance languages must comprise:

- 1) four full courses to be chosen from the following:
French 13, 114, 123a, 151a, 152a, 153b, 154b.
Spanish 13, 114.
Romance Languages 124b.
- 2) French 113 or the equivalent.
- 3) General Education 14, or the equivalent, normally to be completed by the end of the sophomore year.
- 4) at least one course, to be approved by the department, in non-Romance literature.
- 5) a satisfactory record in the senior comprehensive examination.

Students majoring in Romance languages are expected to acquire a thorough knowledge of either French or Spanish and are urged to acquire a competent knowledge of the other, both in language and in literature.

If at least two units of elementary Latin or elementary Greek have not been accepted for admission to college, a Romance language major must satisfy the classics requirement as prescribed under the heading "Major" in the statement of requirements for the degree of Bachelor of Arts

Students intending to major in Romance languages should consult Mr. Reid.

The department wishes to encourage any students who are interested in combining work in French or Spanish with work in another

field to consult Mr. Reid regarding the possibilities for interdepartmental major programs.

A program leading to a degree "with honors in Romance languages" is available to qualified upperclassmen.

Courses in French

During the academic year 1956-57 the following courses in French were given: 11, 12, 13b, 14, 114, 152a, 153b, and Romance Languages 124b.

I. PRIMARILY FOR UNDERGRADUATES

11. *Elementary*. For beginners. The elements of grammar and pronunciation; carefully graded reading; exercises in speaking and writing simple French. Open to freshmen.

Indivisible course.

Through the year. M. W. F., 10 and Tu. Th., 9; F., 1 and M. W. F., 2. STAFF

12. *Intermediate*. Review of grammar, exercises in composition and pronunciation, intensive and extensive reading in a variety of modern texts.

Prerequisite: French 11 or the equivalent, to be determined by a placement test. Open to freshmen.

Indivisible course.

Through the year. Tu. Th., 8; F., 2 and Tu. Th., 9; F., 1 and M. W., 2; F., 1. STAFF

13.* *Oral and Written French*. Third-year course. Admission is subject to the approval of the instructor in each semester. The normal sequence is 13 A during the second semester of one year and 13 B during the following first semester. The two parts of the course are organized as follows:

A. Analytical study and practice of the elements of communication in French: basic conversational patterns; the sound, rhythm and tone patterns of French pronunciation; advanced review of grammar; exercises in written expression. Conducted largely in French.

Prerequisite: Grade of B— or higher in French 12, or equivalent

* Courses 13 and 14, described above, are "third-year" language courses within the meaning of the foreign language requirement for the degree of Bachelor of Arts. Course 14 is offered to meet the needs of the general student; course 13 is designed primarily for the student with particular interest and aptitude for language study, who intends to take subsequent courses in literature. Both may be taken for credit.

skill in the language, to be determined by a placement test. Open to freshmen.

Offered in the second semester in alternate years. To be offered 1957-58.

M. F., 2; laboratory W., 2-4.

MR. REID

B. Advanced practice of communication in French. Composition, oral reports, classroom discussion conducted in French. Not open to freshmen.

MR. NICOL

Offered in the first semester in alternate years. Not to be offered 1957-58.

W. F., 9; laboratory, M., 2-4.

14.* *Readings in French Literature*. Third-year course. Then emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in French. The emphasis in the second semester is on an understanding of a number of French works of universal importance and appeal.

Prerequisite: French 12 or the equivalent, to be determined by a placement test. Open to freshmen.

Through the year. M. W. F., 9 and 10. MR. REID, *first semester*
MR. NICOL, *second semester*

113. *Introduction to French Civilization*. A selective survey of the history, art, literature and music of France, from the Middle Ages to the present time. An elementary reading knowledge of French is desirable but not required. Admission is subject to the approval of the instructor.

French 113 may be counted in fulfillment of the general requirement in art, music and literature, but not toward fulfillment of the requirement in foreign language. Some meetings are held in the Worcester Art Museum.

Through the year. In alternate years. To be offered 1957-58.

M. W. F., 11.

MR. NICOL

114. *General View of French Literature*. An interpretation of the main currents of French literature. Each period is studied by concentrating attention on a limited number of works and authors best bringing to focus the characteristics of the period.

Prerequisite: Grade of B— or higher in French 13 or 14 or the equivalent.

Through the year. Tu. Th., 10-11:15.

MR. KING

123a. *Advanced Language*. A study of selected grammatical

*See footnote page 162.

topics and an introduction to the problem of stylistics. Conducted in French.

Prerequisite: Grade of B— or higher in French 13B.

Half course. Offered first semester in alternate years.

M. F., 10; laboratory W., 2-4.

MR. NICOL

To be offered 1957-58.

Romance Languages 124b. Comparative French and Spanish Phonetics. The elements of general phonetics. A detailed study of the pronunciation of French and Spanish. A required course for majors who wish to be recommended for teaching either language.

Prerequisite: Grade of B— or higher in French 13A or Spanish 13; elementary knowledge of the other language.

Half course. Offered second semester in alternate years.

W. F., 9; laboratory M., 2-4.

MR. REID

Not to be offered 1957-58.

151a.* *The Middle Ages and the Renaissance.* Conducted in French.

Prerequisite: Grade of B— or higher in French 114, or the equivalent.

Half course. To be offered first semester in alternate years.

T. Th., 10-11:15.

MR. KING

To be offered in 1957-58.

152a.* *Classicism.* A study of outstanding literary works, drawn principally but not exclusively from the age of Louis XIV, to illustrate the esthetic and intellectual nature of the classical point of view as it persists in the French thought of various periods. Conducted in French.

Prerequisite: Grade of B— or higher in French 114, or the equivalent.

Half course. Offered first semester in alternate years.

Tu. Th., 10-11:15.

MR. NICOL

Not to be offered in 1957-58.

153b.* *Romanticism and Realism.* A study of outstanding literary works, drawn principally but not exclusively from the late 18th and the 19th Centuries, to illustrate the esthetic and intellectual climates and the literary techniques generally described as romantic or realistic. Conducted in French.

* For French 151a, 152a, 153a, and 154b a certain historical and analytical perspective such as is provided by French 114 is presupposed. These courses are planned so that they need not be taken in any chronological order, but may be taken at the student's convenience. Attention is given to the social forces and movements underlying the attitudes whose literary manifestations are under study.

Prerequisite: Grade of B— or higher in French 114, or the equivalent.

Half course. Offered second semester in alternate years.

Tu. Th., 10-11:15.

MR. NICOL

Not offered 1957-58.

154b.* *The Modern Period.* A study of a few outstanding dramatists, novelists and poets to illustrate the highly varied literary attitudes characteristic of 20th century French literature. Conducted in French.

Prerequisite: Grade of B— or higher in French 114, or the equivalent.

Half course. Offered second semester in alternate years.

Tu. Th., 10-11:15.

MR. NICOL

To be offered 1957-58.

Courses in Spanish

During the academic year 1956-57 the following courses in Spanish were given: 11, 12, 13, 14, and Romance Languages 124b.

11. *Elementary.* For beginners. The elements of grammar and pronunciation; carefully graded reading; exercises in speaking and writing. Open to freshmen.

Indivisible course.

Through the year. Tu. Th., 8; F., 2 and Tu. Th., 10; M., 1. STAFF

12. *Intermediate.* Review of grammar, exercises in composition and pronunciation, intensive and extensive reading of texts dealing with Spain and Spanish America.

Prerequisite: Spanish 11, or the equivalent, to be determined by a placement test. Open to freshmen.

Indivisible course.

Through the year. M. W. F., 8.

STAFF

13.† *Oral and Written Spanish.* A rapid intensive review of grammar; the elements of phonetics; exercises in composition and pronunciation; conversational practice. Conducted largely in Spanish. Third-year course.

Prerequisite: Grade of B— or higher in Spanish 12, or equivalent skill in the language, to be determined by a placement test. Admission is subject to the approval of the instructor. Open to freshmen.

Through the year. Offered in alternate years.

M. F., 9; laboratory W., 2-4.

MR. KING AND MR. BARBERA

Not to be offered 1957-58.

*See footnote page 164.

†See footnote page 162.

14.* *Readings in Spanish and Spanish-American Literature.* Third-year course. The first semester is devoted to Spanish American, the second semester to Spanish works. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in Spanish. The emphasis in the second semester is on the understanding of a number of major works of the literature of Spain, having universal importance and appeal.

Prerequisite: Spanish 12, or the equivalent, to be determined by a placement test. Open to freshmen.

Through the year. M. W. F., 10. MR. REID AND MR. BARBERA

114. *The Literature of Spain.* A general view of Spanish literature with emphasis on the study of the origins and development of the novel and drama, culminating in the masterworks of the nineteenth century. Necessary attention is given to political and cultural background.

Prerequisite: Grade of B— or higher in Spanish 13 or 14 or the equivalent.

Through the year. Tu. Th., 9; F. 1. MR. BARBERA

Offered in alternate years. To be offered in 1957-58.

Romance Languages 124b. Comparative French and Spanish Phonetics. The elements of general phonetics. A detailed study of the pronunciation of French and Spanish. A required course for majors who wish to be recommended for teaching either language.

Prerequisite: Grade of B— or higher in French 13 A, or Spanish 13; elementary knowledge of the other language.

Half course. Offered second semester in alternate years.

Not be offered 1957-58. MR. REID

Russian

Courses in Russian will not be offered in 1957-58.

Russian 11. Elementary Russian. Basic grammar and vocabulary.

Through the year. M. W. F., 11. MRS. RAEFF

Russian 12. Intermediate Russian. Advanced grammar. Reading and conversation.

Through the year. MR. RAEFF

Russian 13. Advanced Russian. Intensive reading of contemporary and literary sources.

Through the year. M. W. F., 1. MR. RAEFF

*See footnote page 162.

The Summer School

The Summer School

DR. ROGER C. VAN TASSEL, *Director*

The Clark University Summer School offers a unique opportunity for summer college study in Central Massachusetts. Intensive instruction in numerous fields is offered in the intimate and pleasant atmosphere of a small university.

During 1957 the three-week Intersession met from June 10 to 29 and the regular summer session from July 1 to August 16. A preliminary announcement of the 1958 Summer School program should be available about January 1, while the Summer School issue of the CLARK UNIVERSITY BULLETIN is published shortly thereafter.

BACKGROUND INFORMATION

A six-week summer school was established in 1921, primarily to serve teachers who were employed during the regular academic year. Its organization and its offerings were relatively independent of the general university program.

The national emergency beginning in 1941 made it desirable to provide opportunities for college students to complete their requirements for a bachelor's degree in as short a time as possible. Accordingly the summer school was lengthened to twelve weeks and made an integral part of the college program. With the passing of the emergency and with the demands for acceleration decreasing, the twelve-week summer was last held in 1949 and in 1951.

In 1950 a return was made to a summer session of approximately six weeks duration and the program with slight modifications was repeated through 1954.

With the impending increase in college students, the Summer School in 1955 was revised to offer a larger variety of courses to undergraduates, graduate students and teachers alike, and to permit students to obtain a larger number of academic credits. The Intersession, a three weeks period of concentrated study, and the

Summer Session permit the student to take three semester courses (9 semester hours of credit). Evening courses are scheduled permitting students to continue their education during the summer while engaged in day-time employment.

To broaden his intellectual horizons the student is also encouraged to engage in informal afternoon seminars, special evening lectures, conferences, to take week-end excursions to famous New England cultural centers and to participate in the various social events.

DEGREES AND CREDITS

All courses offered are accepted at Clark for credit toward the degrees of Bachelor of Arts and Bachelor of Business Administration, or the Evening College degrees of Bachelor of Science in General Studies and Bachelor of Science in Business Administration unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the chairman of the department concerned. Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages, which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration.

COURSES OFFERED

The following courses were offered in 1957 and are listed here as a typical example of the programs of study available at the Inter-session and Summer Session:

BIOCHEMISTRY

- S. 224 Biochemistry

BIOLOGY

- S. 17 General Ecology
- S. 130 General Bacteriology
- S. 247 Physiology of Reproduction
- S. 370 Research in Biology

BUSINESS ADMINISTRATION

- S. 10 Elements of Production
- S. 17 Public Speaking
- S. 18 Corporation Finance
- S. 129 Federal Income Taxation
- S. 137 Managerial Accounting
- S. 185 Production Control

ECONOMICS

- S. 11a Principles of Economics (part I)
- S. 11b Principles of Economics (part II)
- S. 13 Money and Banking
- S. 28 Research in Economic Problems

EDUCATION

- S. 201 Child Growth and Development
- S. 207 Use of Audio-Visual Materials in Teaching
- S. 225 Demonstration in Methods and Materials in Teaching
- S. 227 Workshop in Guidance Services in School Administration

ENGLISH

- S. 11a Composition and Literature
- S. 11b Composition and Literature

- S. 12 Public Speaking
- S. 111 Survey of American Literature (since 1865)

- S. 125 The Short Story

FINE ARTS

- S. 17 Art Appreciation
- S. 171 Modern Art

GENERAL EDUCATION

- S. 115 Man and Language
- S. 144 Introduction to Western Civilization (European tour)

GEOGRAPHY

- S. 191 Cartography
- S. 201b Problem Areas in the World
- S. 280 Geography of the Middle East
- S. 300 Research in Geography

GEOLOGY

- S. 12a Physical Geology

HISTORY AND GOVERNMENT

- S. 130a Political History of the U.S.
- S. 211 Nineteenth Century Europe
- S. 211b Twentieth Century Europe
- S. 236 The American Revolution 1763-89
- S. 237 Economic History of the U.S. since 1815
- S. 238 New Viewpoints in American History
- S. 251a American Political Parties
- S. 283b Modern Eastern Europe
- S. 300 Reading and Research in History and Government

LANGUAGE (Double Courses)

- S. 12 Intermediate French
- S. 14 Readings in French Literature
- S. 11 Introductory German
- S. 12 Intermediate German
- S. 11 Introductory Spanish
- S. 12 Intermediate Spanish

MATHEMATICS

- S. 10 Preparatory Mathematics
- S. 11a Algebra and Trigonometry
- S. 15 Numerical Analysis

PHILOSOPHY

- S. 116 Readings in Existentialism

PSYCHOLOGY

- S. 11a General Psychology
- S. 190 Industrial Psychology
- S. 200b Social Psychology
- S. 204b Personality Evaluation
- S. 350 Research in Psychology

SOCIOLOGY

- S. 11b Analysis of Our Society
- S. 13 Crime, Delinquency and Society
- S. 16 Social Problems

The Evening College

The Evening College

ROBERT M. HYDE, *Director*

GENERAL INFORMATION

The Evening College, established in 1953 as an institution devoted to adult learning, has three primary functions. With the conviction that education in our modern society must be a lifelong process, it provides university education for adults of all ages who seek further knowledge and personal development through selected studies in the broad areas of the liberal arts.

Further, in recognition of the rapidly developing and changing needs of business and the professions, it provides courses designed to help working men and women improve their occupational skills and to prepare for positions of increased responsibility.

Secondly, the Evening College provides an opportunity for adults to earn the bachelor's degree, exclusively by evening study, through programs planned to meet the unique educational needs of the mature person. Formal programs are available leading to the Bachelor of Science degree in either General Studies or Business Administration. In June, 1956, the Evening College graduated its first class of degree candidates.

Finally, as a community service, the Evening College organizes frequent non-credit short courses, institutes and seminars tailored to the specific needs of various civic, professional and business groups. Information regarding such services should be addressed to the Director.

ADMISSION

In general, admission to the Evening College is open to all interested adults seeking to further their education. High school graduation, though not required, is desirable. Continued attendance is contingent upon evidence of ability to profit from the instruction offered. Admission to candidacy for a degree will be granted only upon satisfactory completion of a minimum of 15 and a maximum of 30 semester hours credit.

DETAILED INFORMATION

Detailed information about the Evening College is contained in the special catalogue available from the Director, The Evening College, Clark University, Worcester, Mass. Catalogues are issued in advance of registration for the Fall and Spring semesters.

Register and Directories

Trustees

Administration

Academic Boards and Committees

Faculty

Special Graduate School Appointments

Students — 1956-57

Degrees — 1956

Board of Trustees

Final authority in all matters pertaining to the University is lodged in the Board of Trustees by charter granted by the General Court of the Commonwealth of Massachusetts.

FRANCIS H. DEWEY, JR. (1934)	Worcester, Mass.
ROBERT H. LOOMIS (1936), President	Boston, Mass.
FRANK L. ADAMS (1938)	Worcester, Mass.
HOWARD M. BOOTH (1939)	Worcester, Mass.
SAMUEL H. DOLBEAR (1940)	New York, N. Y.
CARL E. WAHLSTROM (1942), Vice-President	Worcester, Mass.
RAYMOND T. GIFFORD (1947), Treasurer	Worcester, Mass.
JOHN JEPSON (1948)	Worcester, Mass.
HARRY C. COLEY (1948)	Worcester, Mass.
ROLAND A. ERICKSON (1951)	Worcester, Mass.
JOSEPH C. MOLDER (1954), Secretary	Worcester, Mass.
JACOB HIATT (1955)	Worcester, Mass.

ELECTED TO REPRESENT THE ALUMNI

(Four Year Term)

HUGH L. KEENLEYSIDE (1953)	Larchmont, N. Y.
MAXWELL B. SEDER (1954)	Worcester, Mass.
CLIFFORD O. GRIFFITH (1955)	Worcester, Mass.
SAMUEL FLAGG BEMIS (1956)	New Haven, Conn.

Administration

Office of the President

HOWARD B. JEFFERSON, President of the University
 ROBERT P. ANDERSON, Assistant to the President
 IRMA M. BROWN, Secretary to the President
 DONALD L. EVANS, Director of the News Bureau

Office of the Colleges

H. DONALDSON JORDAN, Chairman of the College Board
 HENRY C. BORGER, JR., Dean of Men
 M. HAZEL HUGHES, Dean of Women
 JAMES M. HUND, Director of the Division of Business
 Administration.

GEORGE H. MERRIAM, Director of Admissions

JAMES M. COFFEE, Director of Placement and Vocational Counselor

GLADYS DILIBERTO, Secretary to the Dean of Men and to the Chairman of the College Board

Office of the Graduate School

DWIGHT E. LEE, Secretary of the Graduate Board and Secretary of the Committee on Credentials

SAMUEL VAN VALKENBURG, Chairman of the Committee on Credentials

Office of the Evening College

ROBERT M. HYDE, Director

Office of the Treasurer

RAYMOND T. GIFFORD, Treasurer

18 Chestnut St.,
Worcester, Mass.

PATRICK V. SHEEHAN, Assistant Treasurer

MARY A. HUBBARD, Bursar

ALICE M. CURRIE, Assistant Bursar

RICHARD J. COURTNEY, Manager of the Bookstore

Office of the Librarian

TILTON M. BARRON, Librarian

MARION HENDERSON, Reference Librarian

Office of the Registrar

LYDIA P. COLBY, Registrar

Office of the Medical Director

MICHAEL B. FOX, M.D., Medical Director

MILTON H. YUDELL, M.D., Medical Director

ANNA C. MCATEE, R.N., Nurse in charge of Infirmary

Office of Physical Education

ROCHELEAU Z. GRANGER, JR., Director of Physical Education for Men

M. HAZEL HUGHES, Director of Physical Education for Women

FESTUS G. AMSDEN, Assistant Director of Physical Education for Men

Office of the Alumni Association

HENRY L. SIGNOR, Alumni Secretary

Academic Boards and Committees

THE UNIVERSITY FACULTY

The Faculty consists of the President, the Librarian, and all members of the staff giving regular courses of instruction. It has immediate supervision over the general education work of the university and is responsible for the nomination to the Board of Trustees of candidates for baccalaureate degrees and for honorary degrees.

Secretary of the Faculty, Sherman S. Hayden.

THE UNIVERSITY SENATE

The Senate consists of the President as chairman, and not less than six members of the Faculty appointed by the President. Its duties are to "advise the President with regard to questions of general policy and such other matters as may be laid before it by the President." It may bring appropriate matters to the attention of the Faculty, the Graduate Board and the College Board. It may recommend to the Faculty candidates for honorary degrees.

President Howard B. Jefferson, *Chairman*

Karl O. E. Anderson

Jesse L. Bullock

Charles T. Bumer

Robert S. Illingworth

Vernon Jones

H. Donaldson Jordan

Dwight E. Lee

James A. Maxwell

David Potter

J. Richard Reid

Percy M. Roope

Samuel Van Valkenburg

Heinz Werner

THE GRADUATE BOARD

The Graduate Board consists of the President and representatives of the departments offering advanced graduate instruction. It has general control of the work of the Graduate Division and is responsible for the nomination to the Board of Trustees of candidates for the degree of Master of Arts and of Doctor of Philosophy.

President Howard B. Jefferson, *ex officio*

Jesse L. Bullock	F. Eugene Melder
Charles T. Bumer	Raymond E. Murphy
Sherman S. Hayden	Rudolph F. Nunnemacher
Vernon Jones	David Potter
H. Donaldson Jordan	Percy M. Roope
Gerson Kegeles	Samuel Van Valkenburg
Arthur E. Martell	Seymour Wapner
James A. Maxwell	Heinz Werner

Dwight E. Lee, *Secretary*

THE COLLEGE BOARD

The College Board consists of the President, the Dean of Men, the Dean of Women, the Chairman of the College Board, and six members of the Faculty, appointed by the President. It has immediate supervision over the work of the Undergraduate Division, subject to the control of the Faculty, and recommends to the Faculty candidates for the Bachelor of Arts and Bachelor of Science in Business Administration degrees.

President Howard B. Jefferson, *ex officio*

Dean Henry C. Borger, Jr., *ex officio*

Dean M. Hazel Hughes, *ex officio*

H. Donaldson Jordan, *Chairman*

Robert N. Beck	Joseph A. Nordstrom
Gerson Kegeles	Percy M. Roope
J. Fannin King	

William H. Carter, Jr., *Secretary*

THE EVENING COLLEGE BOARD

The Evening College Board consists of the President, the Director of the Evening College, and six members of the Faculty, appointed by the President. It has immediate supervision, subject to the control of the Faculty, over the Evening College, and recommends to the Faculty candidates for the Bachelor of Science degrees.

President Howard B. Jefferson, *ex officio*

Robert M. Hyde, Director, *ex officio*

Raymond E. Barbera	Donald H. Letendre
Robert F. Campbell	Joseph A. Nordstrom
James M. Hund	Percy M. Roope

THE ACADEMIC COUNCIL

The Council, established by vote of the faculty, is appointed by the President of the University subject to regulations providing for the distribution of its membership among the various divisions and departments.

Its duties are to make recommendations regarding undergraduate educational policies to check on the program of courses offered to undergraduates and to supervise honors work, senior surveys, and comprehensive examinations.

President Howard B. Jefferson, *ex officio*

H. Donaldson Jordan, *ex officio*

Sherman S. Hayden, *Chairman*

Raymond E. Barbera, *Secretary*

Charles T. Bumer

Vernon Jones

James S. Edwards

David Potter

Gordon T. Gwinn

Relly Raffman

Thomas T. Sugihara

**ADMINISTRATIVE COMMITTEE FOR THE DIVISION OF
BUSINESS ADMINISTRATION**

President Howard B. Jefferson, *ex officio*

H. Donaldson Jordan

Raymond E. Murphy

James A. Maxwell

Joseph A. Nordstrom

THE COMMITTEE ON PERSONNEL AND ORGANIZATION

Elected to advise the President regarding the personnel and the organization of departments.

H. Donaldson Jordan, *ex officio*

Charles T. Bumer

Rudolph F. Nunnemacher

Sherman S. Hayden

David Potter

Dwight E. Lee

Heinz Werner

THE LIBRARY COMMITTEERoy C. Gunter, *Chairman*

Gordon T. Gwinn

James F. Beard, Jr.

ATWOOD HALL COMMITTEERobert P. Anderson, *Chairman*

Donald H. Letendre

James S. Edwards

THE STUDENT ACTIVITIES FUND COMMITTEEPercy M. Roope, *Chairman*

Guy H. Burnham

George E. Hargest, *Treasurer***Standing Committees of the Graduate Board**

The President of the University is, *ex officio*, a member of all committees of the Graduate Board.

THE COMMITTEE ON CREDENTIALS

The committee passes upon applications for admission to the graduate division and makes recommendations to the Graduate Board in respect to fellowships and scholarships and candidacy for graduate degrees.

Samuel Van Valkenburg, *Chairman*

Jesse L. Bullock

James A. Maxwell

Vernon Jones

Heinz Werner

Dwight E. Lee, *Secretary***THE COMMITTEE ON PROFICIENCY IN FOREIGN LANGUAGES**

The committee examines candidates for the degree of Doctor of Philosophy for proficiency in foreign languages.

Karl J. Arndt, Professor of German

J. Richard Reid, Associate Professor of Romance Languages

A representative of the student's major department.

Standing Committees of the College Board

The President of the University and the Chairman of the College Board are, *ex officio*, members of all committees of the College Board.

THE COMMITTEE ON ADMISSIONS

Henry C. Borger, Jr.

Sherman S. Hayden

M. Hazel Hughes

George H. Merriam

David Potter

Percy M. Roope

THE COMMITTEE ON ATHLETICS

David Potter, *Chairman*

M. Hazel Hughes

James A. Maxwell

Rocheleau Z. Granger, Jr.

Henry J. Warman

COMMITTEE ON SCHOLARSHIPS

Charles T. Bumer, *Chairman*

David Potter

Roger C. Van Tassel

Faculty

Listed in order of academic seniority within each rank

HOWARD BONAR JEFFERSON, PH.D., LL.D., L.H.D. 160 Woodland St.
President and Professor of Philosophy since 1946.
A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D.,
Denison University, 1948, Hillsdale College, 1952; L.H.D., Colgate Uni-
versity, 1951, Assumption College, 1956.

EMERITI

HOMER PAYSON LITTLE, PH.D., LL.D. 36 Whitman Rd.
Dean of the College and Professor of Geology, Emeritus.
A.B., Williams College, 1906; Ph.D., Johns Hopkins University, 1910.

BENJAMIN SHORES MERIGOLD, PH.D., SC.D. 21 Maywood St.
Professor of Chemistry, Emeritus.

LEROY ALLSTON AMES, M.A. Spencer, Mass.
Professor of English Literature, Emeritus.

CAREY EYSTER MELVILLE, A.B. 33 Vincent Ave.
Professor of Mathematics, Emeritus.

LORING HOLMES DODD, PH.D., L.H.D. 88 Sagamore Rd.
Professor of English and Art, Emeritus.

SAMUEL J. BRANDENBURG, PH.D. 9 Willard Ave.
Professor of Economics and Sociology, Emeritus.

PROFESSORS

JESSE LUNT BULLOCK, PH.D. 35 Downing St.
Professor of Chemistry and Director of the Chemical Laboratories.
A.B., Harvard University, 1914; M.A., 1928; Ph.D., 1932. Assistant Pro-
fessor, 1926-32; Associate Professor, 1932-37; Professor since 1937 (Feb-
ruary).

JAMES ACKLEY MAXWELL, PH.D. 15 Sunnyhill Dr.
Professor of Economics.
A.B., Dalhousie University, 1921; M.A., Harvard University, 1923; Ph.D.,
1927. Instructor, 1924-26; Assistant Professor, 1926-28; Associate Pro-
fessor, 1928-37; Professor since 1937 (February).

SAMUEL VAN VALKENBURG, PH.D. 11 South Flagg St.
Professor of Geography. Director of the Graduate School of Geography.
Ph.D., University of Zürich, 1918. Special Lecturer in Geography, second
semester, 1926-27; Assistant Professor, 1927-29; Associate Professor, 1932-
37; Professor since 1937 (February).

ROBERT STANLEY ILLINGWORTH, M.A., ED.M. Pleasant St., Barre
Professor of Speech and Drama.

A.B., Clark University, 1917; M.A., Lafayette College, 1926; Ed.M., Harvard University, 1933; B.D., Andover Theological School, 1945. Associate Professor of English, 1931-38; Professor since 1938 (February). Director of the Summer School, 1935-41.

VERNON JONES, PH.D. 267 Salisbury St.

Professor of Educational Psychology.

A.B., and M.A., University of Virginia, 1920; M.A., Columbia University, 1924; Ph.D., 1926. Associate Professor, 1926-38; Professor since 1938 (February).

HENRY DONALDSON JORDAN, PH.D. 19 Haviland Street

Professor of English History and Chairman of the College Board.

A.B., Harvard University, 1918; M.A., 1922; Ph.D., 1925. Associate Professor, 1931-38; Professor since 1938 (February).

DWIGHT ERWIN LEE, PH.D. 3 Woodman Rd.

Professor of Modern European History and Secretary of the Graduate Board.

A.B., University of Rochester, 1921; M.A., 1922; Ph.D., Harvard University, 1928 (February). Assistant Professor, 1927-30; Associate Professor, 1930-38; Professor since 1938 (February).

DAVID POTTER, PH.D. 113 South St., Auburn, Mass.

Professor of Biology.

B.Sc., Massachusetts Agricultural College, 1916; M.Sc., 1923; Ph.D., Harvard University, 1932. Instructor, 1924-27; Assistant Professor, 1927-33; Associate Professor, 1933-38; Professor since 1938 (February).

PERCY MARTIN ROOPE, PH.D. 2 Lovell Drive

Professor of Physics.

A.B., Clark University, 1920; M.A., 1924; Ph.D., 1927. Instructor, 1921-27; Assistant Professor, 1927-31; Associate Professor, 1931-43; Professor since 1943.

RAYMOND EDWARD MURPHY, PH.D.

Westminster Rd., Princeton, Mass.

Professor of Economic Geography since 1946.

B.S., Missouri School of Mines and Metallurgy, 1923; M.S., University of Wisconsin, 1926; Ph.D., 1930.

HEINZ WERNER, PH.D. 10 Atwater St.

Professor of Psychology since 1947.

Ph.D., University of Vienna, 1915. G. Stanley Hall Professor of Genetic Psychology since 1949.

CHARLES THEODORE BUMER, PH.D. 121 Richmond Ave.

Professor of Mathematics since 1948.

B.Sc., Denison University, 1919; M.A., Harvard University, 1922; Ph.D., Ohio State University, 1931.

KARL J. ARNDT, PH.D. 5 Hazelwood Road
 Professor of German since 1950.
 M.A., Washington University, 1928; Ph.D., The Johns Hopkins University,
 Professor of Geomorphology.
 1933.

†RICHARD JEWETT LOUGEE, PH.D. 24 Maywood St.
 Professor of Geomorphology.
 B.S., Dartmouth College, 1927; M.A., University of Michigan, 1929; Ph.D.,
 Columbia University, 1938. Associate Professor, 1947-1950 (January);
 Professor since 1950.

ARTHUR EARL MARTELL, PH.D. Maynard St., Northboro, Mass.
 Professor of Chemistry.
 B.S., Worcester Polytechnic Institute, 1938; Ph.D., New York University,
 1941. Assistant Professor, 1942-46; Associate Professor, 1946-51; Pro-
 fessor since 1951.

RUDOLPH FINK NUNNEMACHER, PH.D. Putnam Hill Rd., Sutton, Mass.
 Professor of Biology. Director of the Summer School.
 B.S., Kenyon College, 1934; M.A., Harvard University, 1935; Ph.D., 1938.
 Assistant Professor, 1939-44; Associate Professor 1944-45; Professor since
 1955.

J. RICHARD REID, PH.D. Stafford St., Rochdale, Mass.
 Professor of Romance Languages.
 A.B., Swarthmore College, 1935; M.A., Harvard University, 1936; Ph.D.,
 1943. Assistant Professor, 1944-48, Associate Professor, 1948-56; Pro-
 fessor since 1956.

†SEYMOUR WAPNER, PH.D. 26 Prouty Lane
 Professor of Psychology.
 A.B., New York University, 1939; M.A., University of Michigan, 1940;
 Ph.D., 1943. Associate Professor, 1948-56; Professor since 1956.

SHERMAN STRONG HAYDEN, PH.D. 68 Moore Ave.
 Professor of International Relations.
 A.B., Harvard University, 1930; LL.B., 1933; M.A., Columbia University,
 1936; Ph.D., 1942. Assistant Professor, 1946-49; Associate Professor,
 1949-56; Professor since 1956.

*FREDERICK EUGENE MELDER, PH.D. 49 Circuit Ave.
 Professor of Economics.
 B.B.A., University of Washington, 1926; M.A., 1931; Ph.D., University of
 Wisconsin, 1936. Assistant Professor, 1937-42; Associate Professor, 1942-
 46, and 1950-56; Professor since 1956.

* Absent on leave, 1956-57.

† Absent on leave, first semester, 1956-57.

‡ Absent on leave, second semester 1956-57.

GERSON KEGELES, PH.D.

52 Zenith Drive

Professor of Chemistry.

B.S., Yale University, 1937; Ph.D., 1940. Associate Professor 1951-56; Professor since 1956.

HENRY JOHN WARMAN, PH.D.

193 Lovell St.

Professor of Geography.

B.S. in Ed., Bloomsburg, Pa. State Teacher's College, 1932; Ed.M., Temple University, 1938; Ph.D., Clark University, 1945. Assistant Professor, 1943-44; 1945-48; Associate Professor 1948-57; Professor since 1957 (February).

EDWARD COUNSELMAN HIGBEE, PH.D.

78 Highland St., Holden, Mass.

Professor of Geography

A.B., University of Wisconsin, 1932; M.A., 1938; Ph.D., Johns Hopkins University, 1949. Associate Professor, 1950-57; Professor since 1957 (February).

JOSEPH WEINREB, M.D.

2 State St.

Professor (Affiliate) of Psychology since 1947.

A.B., Vanderbilt University, 1931; M.D., 1935.

RALPH I. DORFMAN, PH.D.

195 Spring St., Shrewsbury, Mass.

Professor (Affiliate) of Chemistry, 1955-56

Ph.D., University of Chicago, 1934.

LESLIE PHILLIPS, PH.D.

66 Gulf St., Shrewsbury, Mass.

Professor (Affiliate) in Clinical Psychology

M.A., University of Chicago, 1944; Ph.D., 1949. Instructor (Affiliate) 1946-50; Assistant Professor (Affiliate) 1950; Associate Professor (Affiliate) 1950-56; Professor (Affiliate) since 1956.

ASSOCIATE PROFESSORS

FREDERICK W. KILLIAN, LL.B.

21 Richards St.

Associate Professor of Sociology since 1947.

LL.B., New York University, 1925; A.B., 1934.

GEORGE EDWARD HARGEST, M.B.A.

209 Lovell St.

Associate Professor of Economics and Business Administration.

B.S., Temple University, 1933; M.Ed., 1937; M.B.A., Boston University, 1947. Assistant Professor, 1942-48; Associate Professor since 1948.

THEODORE NICOL, PH.D.

10 Circuit Ave.

Associate Professor of Romance Languages.

A.B., Clark University, 1926; M.A., Harvard University, 1928; Ph.D., 1933. Visiting Professor, 1946-48; Associate Professor since 1948.

KARL OSCAR EMANUEL ANDERSON, PH.D.

5 Brentwood Dr., Holden, Mass.

Associate Professor of English.

A.B., Harvard University, 1927; M.A., 1928; Ph.D., 1942. Assistant Professor, 1945-49; Associate Professor since 1949.

ROY CHALMERS GUNTER, PH.D.

Dodge, Mass.

Associate Professor of Physics.

B.S., Bowdoin College, 1938; M.A., Boston University, 1939; Ph.D., 1942. Instructor in Physics and Mathematics, 1941 (February) - 1943; Assistant Professor of Physics, 1943-49; Associate Professor since 1949.

*ROBERT FRANCIS CAMPBELL, PH.D.

209 Lovell St.

Associate Professor of American History.

A.B., Yale University, 1939; M.A., Columbia University, 1940; Ph.D., 1947. Assistant Professor, 1946-50, Associate Professor since 1950.

*CLAUDE W. BARLOW, PH.D.

547 Park Ave.

Associate Professor of Classics.

A.B., Amherst College, 1928; M.A., Indiana University, 1930; Ph.D., Yale University, 1935. Assistant Professor, 1947-52; Associate Professor since 1952.

TAMARA DEMBO, PH.D.

20 Loudon St.

Associate Professor of Psychology since February, 1953.

Ph.D., University of Berlin, 1930.

RICHARD S. LAZARUS, PH.D.

15 Fairlawn Road

Associate Professor of Psychology since 1953.

A.B., College of the City of New York, 1942; M.S., University of Pittsburgh, 1948; Ph.D., 1948.

MORRIS H. COHEN, PH.D.

989 Main St.

Associate Professor of Government.

A.B., University of Chicago, 1939; Ph.D., 1950. Assistant Professor, 1947-53; Associate Professor since 1953.

JOHN SUNAPEE STUBBE, PH.D.

101 South Flag St.

Associate Professor of Mathematics.

B.S., University of New Hampshire, 1941; M.S., Brown University, 1942; Ph.D., University of Cincinnati, 1945; Assistant Professor, 1949-53; Associate Professor since 1953.

TILTON M. BARRON, B.L.S.

120 Amherst St.

Librarian since 1954.

B.A., Colorado College, 1937; B.L.S., Columbia University School of Library Service, 1940.

* Absent on leave, 1956-57.

- GORDON T. GWINN, PH.D.** 26 Charlotte St.
Associate Professor of Psychology.
A.B., University of Arizona, 1942; Ph.D., Yale University, 1948. Assistant Professor, 1949-54; Associate Professor since 1954.
- J. FANNIN KING, M.A.** 7 Hawthorne St.
Associate Professor of Romance Languages.
A.B., Pomona College, 1936; M.A., Harvard University, 1937. Assistant Professor, 1946-54; Associate Professor since 1954.
- HENRY C. BORGER, JR., PH.D.** 156 Woodland St.
Dean of Men since 1954. Associate Professor of Education.
A.B., Princeton University, 1933; M.A., Columbia University, 1938; Ph.D., 1954. Assistant Professor, 1950-54; Associate Professor since 1954.
- WILLIAM H. CARTER, JR., PH.D.** 18 Oread St.
Associate Professor of English.
A.B., Middlebury College, 1936; M.A., Harvard University, 1938; Ph.D., 1951. Instructor, 1949-51; Assistant Professor, 1951-55; Associate Professor since 1955.
- JAMES S. EDWARDS, M.A.** 21 Richards St.
Associate Professor of German.
A.B., Brown University, 1936; M.A., 1938. Assistant Professor, 1947-55; Associate Professor since 1955.
- DANIEL GORENSTEIN, PH.D.** 71 Oldham Rd., West Newton, Mass.
Associate Professor of Mathematics.
A.B., Harvard University, 1943; Ph.D., 1950. Assistant Professor, 1951-55. Associate Professor since 1955.
- ROBERT N. BECK, PH.D.** 24 Mayflower Rd., Leicester, Mass.
Associate Professor of Philosophy.
A.B., Clark University, 1947; M.A., Boston University, 1948; Ph.D., 1950. Instructor, 1948-52; Assistant Professor, 1952-56; Associate Professor since 1956.
- EDITH MEYER-TAYLOR** 52A Eliot St., Jamaica Plain, Mass.
Associate Professor (Affiliate) of Psychology.
Ph.D., University of Leipzig, 1933; Diplôme des Etudes Pédagogiques, University of Geneva, 1935.

ASSISTANT PROFESSORS

- M. HAZEL HUGHES, M.ED.** 638 Pleasant St.
Dean of Women. Director of Physical Education for Women.
B.Ed., Clark University, 1944; M.Ed., Boston University, 1949. Associate Dean for Women, 1949-54; Dean since 1954.
- ROCHELEAU Z. GRANGER, JR., M.A. in Ed.** 113 Paxton St., Leicester, Mass.
Director of Physical Education for Men since 1949.
A.B., Clark University, 1938; M.A. in Ed., 1939.

- JOSEPH A. NORDSTROM, M.S.** 18 Oread St.
Assistant Professor of Business Administration since 1950.
B.S., Northeastern University, 1941; M.S., Massachusetts Institute of Technology, 1947.
- DONALD HENRY LETENDRE, M.A. in Ed.** 17 Oberlin St.
Assistant Professor of English.
A.B., Clark University, 1938; M.A., in Ed., 1939. Instructor, 1946-52; Assistant Professor since 1952.
- MARC RAEFF, Ph.D.** 989 Main St.
Assistant Professor of Russian History and Language.
M.A., Harvard University, 1947; Ph.D., 1950. Instructor, 1949-52; Assistant Professor since 1952.
- THOMAS TAMOTSU SUGIHARA, Ph.D.**
3 Longview St., West Boylston, Mass.
Assistant Professor of Chemistry since 1953.
A.B., Kalamazoo College, 1945; S.M., University of Chicago, 1951; Ph.D., 1952.
- JAMES M. HUND, Ph.D.** Goodale St., West Boylston, Mass.
Assistant Professor of Economics since 1954.
A.B., Amherst College, 1943; M.A., Princeton University, 1952; Ph.D., 1954.
- ROGER C. VAN TASSEL, M.A.** 31 Huntington Avenue
Assistant Professor of Economics since 1954.
A.B., Union College, 1947; M.A., Cornell University, 1950; Ph.D., Brown University, 1956.
- ROBERT W. BAKER, Ph.D.** 28 Walnut Hill Drive
Assistant Professor of Psychology since 1954.
A.B., Hobart College, 1947; Ph.D., Clark University, 1953.
- JAMES M. COFFEE, Ph.D.** 97 Vassar Street
Assistant Professor of Education since 1954, and Director of Placement.
A.B., Duke University, 1949; M.A., Cornell University, 1950; Ph.D., Harvard University, 1957.
- SAMUEL PENDLETON COWARDIN, III** Southborough, Mass.
Assistant Professor of Fine Arts.
A.B., Harvard University, 1943; M.A., 1948.
Instructor, 1949-55; Assistant Professor since 1955.
- RAYMOND E. BARBERA, DOCTOR EN LETRAS** 23 Shirley St.
Assistant Professor of Romance Languages.
A.B., Brooklyn College, 1947; M.A., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949. Instructor, 1953-55; Assistant Professor since 1955.
- JAMES FRANKLIN BEARD, JR., Ph.D.** 37 Stone St., Auburn, Mass.
Assistant Professor of English since 1955.
A.B., Columbia College, 1940; M.A., Columbia University, 1941; Ph.D., Princeton University, 1949.

- THEODORE LEVENTHAL, PH.D. 827 Pleasant St.
Assistant Professor (Affiliate) of Psychology, 1955-56.
B.A., Brooklyn College, 1948; Ph.D., University of Kansas, 1953.
- BERNARD KAPLAN, PH.D. 25 Pocasset Ave.
Assistant Professor of Psychology since 1955.
A.B., Brooklyn College, 1948; M.A., Clark University, 1950; Ph.D., 1953.
- RELLY RAFFMAN, M.A. 45 Boyd St., Cherry Valley, Mass.
Assistant Professor of Music.
B.A., Dartmouth College, 1943; M.A., Columbia University Teachers College, 1949. Instructor, 1954-56; Assistant Professor since 1956.
- GEORGE A. BALKO, JR. Chestnut Hill Dr., Holden
Assistant Professor of Business Administration since 1956.
M.E., Stevens Institute of Technology, 1947; M.B.A., New York University, 1952.
- ROLF LOOSLI 115 Elm Street
Assistant Professor of Physiology since 1956.
Certificate for College Teaching in Biology, University of Zurich, 1953.
- JOHN T. REYNOLDS, M.S. Bunker Hill Rd., Leicester
Assistant Professor of Biology since 1956.
B.S., Boston College, 1951; M.S., University of Massachusetts, 1954.
- FRANK R. YULO, M.ED. 7 Hawthorne St.
Assistant Professor of Education, first semester 1956-57.
B.S., New Haven State Teachers College, 1953; M.Ed., Hillyer College, 1955.
- ANDREW DIBNER, PH.D. 24 Baxter St.
Assistant Professor (Affiliate) of Psychology since 1956.
A.B., Brooklyn College, 1948; M.A., University of Michigan, 1949; Ph.D., 1953.
- ALVIN E. WINDER, PH.D. 51 Tarrytown Lane
Assistant Professor (Affiliate) of Psychology since 1956.
B.A., Brooklyn College, 1947; M.A., University of Illinois, 1948; Ph.D., University of Chicago, 1952.
- FRANK UNGAR, PH.D. 43 Woodway Dr., Shrewsbury, Mass.
Visiting Assistant Professor of Chemistry since 1956.
A.B., Ohio State University, 1943; M.S., Western Reserve University, 1948; Ph.D., Tufts University, 1952.
- WALTER H. CROCKETT 94 Brantwood Rd.
Assistant Professor of Psychology since 1957 (February).
A.B., University of Kansas, 1947; M.A., 1949; Ph.D., University of Michigan, 1953.

INSTRUCTORS

- GUY HARVEY BURNHAM, M.A. 19 Woodman Rd.
Instructor in Geography since 1946; Cartographer, Graduate School of
Geography since 1922.
A.B., Clark University, 1916; M.A., 1922.
- HERBERT J. BASS, PH.D. 27 Great Brook Valley Ave.
Instructor in History, 1956-57.
B.A., Boston University, 1950; Ph.D., University of Rochester, 1956.
- JOHN A. MEIXNER, A.M. 28 Hollywood St.
Instructor in English, 1956-57.
A.B., College of the City of New York, 1951; A.M., Brown University, 1953.
- ROBERT E. LINGNER, M.A. 220 Webster St.
Instructor in Geology, 1956-57.
A.B., Clark University, 1954; M.A., University of Maine, 1956.

LECTURERS

- PHILIP H. BREEN, LL.B. 151 Barnard Rd.
Lecturer in Business Law since 1947.
A.B., The College of the Holy Cross, 1920; LL.B., Boston University, 1923.
- JOHN LANE, PH.D. 305 Belmont St.
Lecturer in Psychology, 1956-57.
B.S., University of Massachusetts, 1949; M.A., Clark University, 1951; Ph.D.,
1954.
- M. EVELYN HARRIMAN, M.A. in Ed. 39 Courtland St.
Lecturer in Education, 1956-57.
B.S. in Ed., Boston University, 1948; M.A. in Ed, 1950.
- DAYTON D. SHEPHERD, M.A. Centerbrook, Conn.
Lecturer in Education, 1956-57.
B.S., Southwest Missouri State College, 1946; M.A., Yale University, 1950.
- CONSTANTINE G. YAVIS 35 Winifred Ave.
Visiting Lecturer in Classics, 1956-57.
A.B., Syracuse University, 1937; A.M., 1940; Ph.D., Johns Hopkins Uni-
versity, 1942.
- PETER E. COMALLI, JR., PH.D. 6 Richards St.
Lecturer in Psychology 1956-57.
B.A., Swarthmore College, 1950; M.A., Clark University, 1951; Ph.D., 1956.
- LILLIAN RAEFF, PH.D. 989 Main St.
Lecturer in Psychology, 1956-57.
B.S., College of the City of New York, 1950; M.A., Clark University, 1951;
Ph.D., 1956.
- MELVIN FEFFER, PH.D. 1 Wedgewood Dr.
Lecturer in Psychology, 1956-57.
B.S., University of Massachusetts, 1948; Ph.D., University of Chicago, 1954.

- HAROLD GOODGLASS, PH.D.** Needham, Mass.
Lecturer in Psychology, 1956-57.
B.A., College of the City of New York, 1939; M.A., New York University 1948; Ph.D., University of Cincinnati, 1951.
- HERBERT LIPTON, PH.D.** Lexington, Mass.
Lecturer in Psychology, 1956-57.
B.A., Rutgers University, 1949; M.A., Clark University, 1951; Ph.D., 1954.
- FRANK WHITING, PH.D.** 82 Reed St.
Lecturer in Psychology, 1956-57.
B.A., University of Pennsylvania, 1949; M.A., 1951; Ph.D., 1953.
- ERWIN RAISZ, PH.D.** Cambridge, Mass.
Visiting Lecturer in Geography, first semester 1956-57.
Diploma, Royal Polytechnicum, Budapest, 1914; M.A., 1924; Ph.D., Columbia University, 1929.
- BRUCE ROBERT MORRIS, PH.D.** Amherst, Mass.
Lecturer in Economics, first semester 1956-57
B.A., Western Reserve University; M.A., Ohio State University; Ph.D., University of Illinois.
- BURTON N. GATES, PH.D.** 24 Charlotte St.
Research Associate in Biology since 1954.
A.B., Clark University, 1905; A.M., 1906; Ph.D., 1909.
- EDWARD H. HASTINGS, M.A.** 8 Evandale Terr., Dorchester, Mass.
Lecturer in English, 1955-56.
A.B., Wesleyan University, 1946; A.M., Harvard University, 1947.
- KARL PRIBRAM, M.D.** 200 Retreat Ave., Hartford, Conn.
Lecturer in Neuropsychology, second semester, 1955-56.
S.B., University of Chicago, 1939; M.D., 1941.
- HORST VEY, DR. PHIL.** 38 Monadnock Rd.
Lecturer in History of Art, second semester, 1956-57.
Dr. Phil., University of Koln, 1955.
- CHARLES WESLEY CHURCHILL** 21 Richards St.
Lecturer in Cultural Anthropology, second semester, 1956-57.
B.A., Rutgers University (Newark Branch), 1934; M.A., New York University, 1940; Ph.D., 1942.

ASSISTANT IN PHYSICAL EDUCATION

- FESTUS G. AMSDEN** 6 Downing St.
Assistant Director of Physical Education for Men since 1954.
A.B., Clark University, 1951.

Special Graduate School Appointments, 1956-57

TEACHING ASSISTANTS

- JOHN D. COUPE Economics and Sociology
B.A., Worcester Polytechnic Institute, 1953; M.A., Clark University, 1957.
- LEONARD P. KRIVY History, Government and
International Relations
B.A., New York University, 1955; M.A., 1956.
- DONALD M. KRUS Psychology
B.A., Drew University, 1949; M.A., Clark University, 1951; Ph.D., 1957.
- GEORGE F. MACDOWELL Economics and Sociology
A.B., Dalhousie University, 1948; M.A., Clark University, 1950.
- HENRY A. MAURAS Mathematics
A.B., St. Anselm's College, 1955.
- JAMES M. MILLER History, Government and
International Relations
B.A., Park College, 1952; M.A., University of South Dakota, 1953.
- JAMES MONIZ Economics and Sociology
B.B.A., Clark University, 1956.

APPOINTMENTS FROM GRADUATE FUNDS

THE ALUMNI ASSOCIATION FUND

- SONOKO OHWAKI Psychology
A.B., Miyagi Women's College, 1948; M.A., Yohoku University, 1951.

THE GEORGE S. BARTON FUND

- JOSEPH E. HICKEY, JR. Geography
B.A., Clark University, 1954; M.A., 1957.
- ELIZABETH M. FOLEY Education
A.B., Clark University, 1954; M.A. in Ed., 1957.

THE JOSEPH F. DONNELLY MEMORIAL FUND

- RAYMOND F. BOGUCKI Chemistry
B.S., College of the Holy Cross, 1953; M.S., 1954.
- HARRY J. CHRISTOFFERS Chemistry
B.S., University of Washington, 1943; M.S.; 1945.

- EMILIO J. TROIANELLO Chemistry
B.S., Tufts University, 1939; M.S., 1941.
- ARNOLD H. RAPHAELSON Economics and Sociology
A.B., Brown University, 1950; M.S., Columbia University, 1951; M.A.,
Clark University, 1956.
- ROGER J. E. BROWN Geography
B.A., University of Toronto, 1952; M.A., 1954.
- ALEXANDER R. GASSAWAY Geography
B.A., University of Virginia, 1950; M.A., George Washington University,
1956.
- HARRY G. SCHALCK History, Government and
International Relations
B.A., Ursinus College, 1949; M.A., Clark University, 1951.
- PETER ALDIN Psychology
B.Phil., Paris University, 1950; B.A., College of the City of New York,
1954; M.A., 1955.

THE AUSTIN S. GARVER FUND

- JOSEPH ROESMER Chemistry
B.S., University of Mainz, 1953; M.S., 1955.
- WON HOON CHUNG Economics and Sociology
Diploma, Seoul National Commercial College, 1941.
- KANIZ FATIMA YUSUF Geography
F.A. and B.A., Islamia College for Women, 1945; M.A., University of
Punjab, 1948.
- ROBERT M. MOORADIAN History, Government and
International Relations
A.B., Lafayette College, 1956.
- LAURENCE C. SMITH Psychology
B.A., Trinity College, 1956.

THE CHARLES H. THURBER FUND

- JAMES A. SHERBANICK Economics and Sociology
B.A., University of Alberta, 1955; B.Com., 1956; M.A., Clark University,
1957.

Directory of Students

1956-57

Names of students are grouped in four lists:

- I (1) — graduate students, undergraduate students and special students in attendance during the regular academic year 1956-57;
- I (2) — those who were in attendance less than one semester;
- II — those who attended the 1956 Summer School.

Explanation of letters and symbols:

S	— Scholar (graduate)	G	— geography
F	— Fellow (graduate)	H	— history, government, and international relations
'57, '58, '59, '60	— undergraduates	M	— mathematics
g	— students formally admitted to the graduate school	Ph	— physics
s	— special students	Phil	— philosophy
B	— biology	Ps	— psychology
BA	— business administration	RL	— romance languages
Ch	— chemistry	V	— veteran (preceding classification)
Ec	— economics and sociology	*	— student in residence during the first semester only
Ed	— education	†	— student in residence during the second semester only
En	— English		
FA	— fine arts		
Ger	— German		

State omitted—Massachusetts; town omitted—Worcester; street names refer to streets unless otherwise indicated.

I (1). GRADUATE STUDENTS, COLLEGE STUDENTS AND SPECIAL STUDENTS IN ATTENDANCE DURING THE REGULAR ACADEMIC YEAR

Name	Classification	Home Address	Local Address
†Aareskjold, Helen V.	60	Brooklyn, N. Y.	Sanford House
Aaronson, Anthony Eli	59		46 Dellwood Rd.
*Abraham, William John	V 57		14 Acton
*Adelman, Stuart Lee	60	South Orange, N. J.	Hotel Bancroft
Adelson, Elaine Sima	59		54 Amherst
Agafonoff, Alexander	Ec S	New South Wales, Australia	24 Oread
Ahearn, William Edmund	60	Wassaic, N. Y.	2 Claremont Sq.
Ahlstrom, Alice Solveig	59		21 Duxbury Rd.
Akerlund, Jane Alice	59		16 Bourne
Alberg, Richard Frank	V G S	Pawtucket, R. I.	8 Freeland
Aldin, Peter	Ps F	New York, N. Y.	100 Woodland
Aldis, Thomas Lewis	V 59		43 Minthorne
Almeida, Silverio Pedro	V 57		48 Belmont
Amnott, James Roy	59	Danvers	6 Dana Rd., Oxford
Andersen, Neil Richard	V 60		14 Catharine
*Anderson, Carl F., Jr.	s		7 Watt Rd.
Anderson, Ralph William, Jr.	59		50 Hollywood
Anderson, Richard Langdon	58		143 Woodland
*Arkwell, Chester Stanley	V 59		17 W. Boylston Dr.
Armstrong, Richard Carleton	58	Wollaston	180 Woodland
Aron, Arlene Lee	Ps F	Providence, R. I.	3 Maxdale Rd.
Arons, Martin	57	Berlin-Lankwitz, Germany	35 Maywood
Aronson, Richard Jay	59	Brooklyn, N. Y.	38 Cedar
Asadoorian, Oscar	58	Watertown	145 Woodland
Aslanian, Audrey Mary	59		211 Moreland
Aulson, William Neil	V 57	Lynn	
Avila, Nidia	G g	Panama, Panama	7 Hawthorne
Babbidge, Theresa Gertrude	Ed g		54 Hollywood
Bagley, Richard	V H g	Blackstone	789 Grove, Holden
Bahe, Peter	V 59	Holden	
Bailey, Bryan Albert	59	Gardiner, Me.	145 Woodland
Baird, Charles Wilbur	60	Whitinsville	
*Banach, Albert	V s		65 Lafayette
*Baraf, Joseph Elliot	58	Great Neck, L. I., N. Y.	40 Richards
Barker, Rosalind Francine	58	Forest Hills, N. Y.	Sanford House
Barrett, William Franklin	V 59	Uxbridge	
Barry, Charles Richard	V 60	Rochester, N. Y.	767 Main
Barry, Richard Daniel	60	Gardner	Estabrook Hall
Barton, Neil Mark	58	New York, N. Y.	3 Albert
Bastille, Arthur Joseph	V 59		21 Catharine
Bates, Richard Allen	59	Shrewsbury	
Baum, Rachele Aline	60	New York, N. Y.	Fanning House
Bean, Clayton Richard	58	Stratham, N. H.	145 Woodland
Beauregard, Mrs. Doris S.	Ev		23 Princeton
Bedrosian, Peter	60	Milford	
Behrman, Joseph Stephen	58	Great Neck, N. Y.	36 Richards
*Bench, Cecil Charles	V G g	Springfield, Mo.	15 Stoneland Rd.
Benjamin, David Stuart	60		61 Westview Rd.
Benuskavich, Daniel Joseph	V 58		86 Penn Ave.
Berger, Peter Leonard	60	New Haven, Conn.	Estabrook Hall
Bergman, Anna Marie	59		116 Apricot
Bergman, Howard Standish	60	West Hartford, Conn.	Estabrook Hall

Name	Classification	Home Address	Local Address
*Berkley, George Eugene	Ec g		78 Pleasant
Berman, Mrs. Davida Elaine	58		28A King
Berman, Joseph Irvin	57	Marlboro	
Bernard, Joan Carol	58	Shrewsbury	
†Berry, Robert Henry	s		29 Wachusett
Berthiaume, Gerald Francis	V 58	Auburn	
Biancheria, Amilcare	Ch F		145 Woodland
Bilodeau, Judith Ann	59	Salem	Fanning House
Bliss, Monte Maurice	Ps g	Van Hiseville, N. J.	4 Hartshorn Ave.
Bloomberg, Morton Arnold	58	Swampscott	102 Downing
Boback, Charles Frederick	V 58	Clinton	
Bodansky, Margery	Ps F	New York, N. Y.	14 Woodland
Bogage, Lewis Eugene	57		253 June
Bogigian, Robert Aram	57		8 Moen
Bogucki, Raymond Francis	Ch F		222 Constitution Ave.
Bohigian, Theodore Ara	60		14 George
Bolan, Richard Joseph	V 60		47 Beaver
Boliver, Lillian Blanche	59	Shrewsbury	
Bolotin, Michael Herbert	58	Mattapan	c/o Pathology Lab., Worcester State Hospital
Bonenfant, Paul Aime	V Ch g	North Grafton	
Bonofiglio, Richard A.	s		694 Franklin
Bosshard, Anne Morant	60	41 Cedar	Blakeslee House
†Boucher, Emile Omer	V s		6 Windsor
Boudreau, Norman Joseph	V 58	Gardner	
Bouffard, Norman Arthur	59		4 Prentice
Bouley, Joanne Marie	60	Oxford	Woodland House
†Bowen, Marshall Everett	59	E. Providence, R. I.	40 May
Boyd, Ernest Burnside	59		13 Fruit
Boyle, Mary-Ellen Catharine	58		142 June
Bradford, Roger Roy	Ec g		83-10 Park Ave.
Brassard, Raymond Joseph	58	Barre, Vt.	145 Woodland
Breen, George Jefferson	60		14 Charlton
Breen, Mrs. Jane Collins	Ed g	Shrewsbury	
Brennan, David Bernard	V 57	Leominster	
Brennan, Robert Charles	60	Leominster	Estabrook Hall
†Bright, William Oliver, Jr.	s	Monrovia, Liberia	Estabrook Hall
*Brockelbank, Rebecca Nancy	G S	Georgetown	72 Woodland
Brockman, Michael David	58	Brooklyn, N. Y.	36 Richards
Brodsky, John	59	Yonkers, N. Y.	875 Main
†Brodsky, Stephen Emanuel	60	Bridgeport, Conn.	6 Downing
Brotherton, Lynda Beth	57		108 Purchase
Broverman, Donald Monroe	Ps g	Pittsfield	53 Gt. Brook Valley Ave.
Broverman, Mrs. Inge Komers	57		53 Gt. Brook Valley Ave.
Brown, Addison Sewall	V 58	Brunswick, Me.	905 Main
Brown, Donald Frederick James	58	Portland, Me.	16 Marble
Brown, Edward Vincent	V 59	Caldwell, N. J.	112 Woodland
Brown, Otis Barnes	V Ec F	Wakefield, R. I.	43 Woodland
Brown, Roger James Evan	G F	Toronto, Ont., Can.	148 Beacon
Brown, Walter Mahlon	58	Southampton	16 Marble
Bruce, Marshall Holland	57	Hudson	
Brunelle, Richard Leon	60	West Brookfield	15 Princeton
Bryant, Barbara	57	Grafton	
Bryant, Charles Ross	60		40 Abbott
Bryson, Carl Joseph	V 59	New York, N. Y.	10 So. Buffum
Buchholz, Michele Andrea	58	New Rochelle, N. Y.	Woodland House
Buckley, Robert Russell	V 60		529 Park Ave.
Bujnevici, John Joseph	V 57	Gilbertville	

Name	Classification	Home Address	Local Address
†Burner, Charles Edward	Ed g		1 Germain
Buscone, Louis Joseph, Jr.	59	Milford	16 Marble
Byron, Anne Elizabeth	58	Templeton	Blakeslee House
Caloccia, Ernest Michael	58		18 Shamrock
Cameron, Bernard Joseph	V 58		118 Woodland
*Campbell, James Douglas	V s	Shrewsbury	
†Canty, Jane Ann	60		15 Wyola Dr.
Carapetian, Jean Y.	58	Tehran, Iran	91 Summer
†Carey, John Francis, Jr.	s	Millbury	
Carey, Robert Vincent	V Ed g	Millbury	
Cariglia, Joseph John	58		103 Heywood
Carlin, Richard Thomas	60	Tarrytown, N. Y.	Estabrook Hall
Caron, Henri Lionel	V 58	Leominster	
Carr, Douglas Dillaber	58	Warren	
Carroll, Eileen Kathryn	60		31 Stoneland Rd.
Carter, John Augustin	G g	Chestnut Hill	
Carter, Mrs. Lorna L.	57		18 Oread
Casey, Thomas Michael	Ps S	Lebanon, N. H.	25 Circuit Ave.
Cassidy, James Joseph, Jr.	60		7 Sycamore
Caswell, Doreen Frances	60	Westport	Fanning House
Cedargren, Carl John, Jr.	59	Emporium, Pa.	3 Albert
Cha, Chung Hwa	58	Seoul, Korea	Blakeslee, House
Chakour, Mitchell Gabriel, Jr.	s		160 Chino Ave.
Chamberlain, Peter Baird	57	Westminster, Vt.	16 Marble
*Chang, SeWon	58	Chonan, Korea	Estabrook Hall
Charlesworth, Donald William	57		2 Lauf
Chase, Carole Elaine	58	W. Boylston	
Chase, Cynthia Ellen	59	W. Boylston	
Check, Maxine Harriet	60	New York, N. Y.	Sanford House
Christie, John Chris, Jr.	V 57	Mt. View, N. J.	Estabrook Hall
Christoffers, Harry John	Ch F	Amherst	13 Amherst
Christopher, Peter Robert	59		10 Clifton
Chung, Won Hoon	Ec F	Seoul, Korea	22 Richards
Church, Mildred Warner	60	Urbana, Ill.	Woodland House
Cisek, William Peter	60	W. Hartford, Conn.	Estabrook Hall
†Clark, Mrs. Dorothy L.	Ed g		13 Rockdale
Clarke, Alice Elizabeth	60		17 Park Villa Ave.
Clarkson, Frank Edward	Ps F	Concord	127 Institute Rd.
Clarkson, Harry Elwood	60	Saylesville, R. I.	Estabrook Hall
Clarkson, Robert Ernest	59	Delmar, N. Y.	28 Marble
Clinedinst, Richard W. P.	57		37 William
Cocchiarella, John Peter	60	Milford	Estabrook Hall
Cocchiola, Ronald Charles	58	Bridgeport, Conn.	16 Marble
Cohan, Mrs. Suzanne H.	57		75-6 Park Ave.
Cohen, Charlotte Roslyn	Ed g		49 Sagamore Rd.
Cohen, Jerrold Paul	60		25 Somerset
Cohen, Leah Ann	60	Brooklyn, N. Y.	Sanford House
Cole, Bruce Lawson	V 58		2 Courtland
Coletti, Silvia Anne	60	Wollaston	17 Germain
Collins, Mrs. Delores F.	57		20 Lakeside Ave.
Collins, George Miles	58	Milton	16 Marble
Cook, Edward Werner	59	E. Hartford, Conn.	100 Woodland
Cooper, William George, Jr.	V 57		73 Brigham Rd.
Cooperman, Edward Charles	57	Brooklyn, N. Y.	36 Richards
Corinaldi, George Vivian	G g	Jamaica, L. I., N. Y.	794 Main
Cornwall, Brooke	V G F	Ottawa, Ontario, Can.	164 Beacon
Cote, Jeannette Cecile	58	Moosup, Conn.	6 Chatham

Name	Classification	Home Address	Local Address
*Cotton, Dorothy Raye	58		3 Knollwood Dr.
Coupe, John Donald	Ec F		7 Freeland Ter.
Courtney, Richard John	Ev		58 Florence
Cowenhoven, Nicholas Remsen	V Ed g	Grafton	
Cox, John Henry	V 58	Hardwick, Vt.	112 Woodland
Craig, Marcia Laura	58	Whitinsville	
Cronan, John Francis	V 60	Auburn	
Cronin, Edward Michael	H g		9 Abington
Crooks, Cynthia Ann	60	N. Brookfield	
Culbert, John Everett	V 57		10 Linden
Cundall, Patricia Anne	59		67 New Vista Lane
Currier, Wade Richardson	G F	Washington, D. C.	43 Queen
Curtin, Thomas Albert	V 58	Bellows Falls, Vt.	37 May
Cuti, Vincent Jay	60	Huntington, L. I., N. Y.	Estabrook Hall
D'Agostino, Benjamin David	Ps S	Ardmore, Pa.	138 Woodland
Damico, Anthony Philip	V 58	Hudson	
Davidson, Marcia Edith	G S	Hillsdale, N. J.	24 Gates
Davis, Beverly	60	Providence, R. I.	Sanford House
Davis, James Ernest	V 60	Marlboro	
Davis, Roberta Louise	B S		24 Walcott
Dawson, George Brammer	57	Prospect Plains, N. J.	35 Maywood
Dawson, Robert William	V 57	Albany, N. Y.	7 Kilby
DeBoer, Sidney Ernest	V 57	Clinton	
Dedes, Michael Stephen	V 57		4 Warden
Degen, Sharon Low	60	Meriden, Conn.	Sanford House
Degrandpre, Charles Allyson	58	Jaffrey, N. H.	35 Maywood
Delia, Herbert Claude	V 58	Malden	
Denardo, Richard Steven	V 59	Waterbury, Conn.	10 Crystal
DeNigris, Nicholas Emanuel	57	New Britain, Conn.	16 Marble
*DePaul, Alice Veronica	Ev		16 Shepard
DeProspero, Ernest Rocco, Jr.	59		1 Somerville Rd.
D'Errico, Peter Michael	V 57		13 Northboro
Desmarais, Ronald Adelard	59	Fisherville	
†Dichter, Dave	G S	Atlantic City, N. J.	30 Beaver
Dickman, Michael Barry	60	Brooklyn, N. Y.	Estabrook Hall
DiGregorio, Carl John	59	Milford	6 Birch
Dion, Louis Ferdinand	Ed g		500 Salisbury
Dircks, William Joseph	Ec S		40 Cedar
DiStefano, Frank James, Jr.	59	Shrewsbury	
Ditesheim, Francois Jacques	s	Lachaus-de-fonds, Switzerland	Estabrook Hall
Djeu, Wendy Nyerd Wang	57	Buenos Aires, Argentina	Woodland House
*Dmuchovsky, Basil	s	Brimfield	
Doliber, John Harris	59	Marblehead	16 Marble
Dolley, Marilyn Louise	59	No. Hollywood Cal.	Woodland House
Dolphin, Donald Herbert	V 60		34 Halmstad
Donabedian, Richard Kasper	58		324 June
Donaghue, John Ames	60	Wethersfield, Conn.	Estabrook Hall
Donaldson, James Robert, Jr.	V 60	Shrewsbury	
Donaldson, Judith Lynn	60	Shrewsbury	Fanning House
Donoian, Haig Cadmus	Ch F	Lowell	40 Richards
*Donovan, Stephen	59	Falmouth	24 Beaver
Dooley, Phyllis Ann	59		3 Laurel
*Doran, Mary Agnes	V Ch g		356 Chandler
Dowgiert, Paul Robert	V 60		7 Hawthorne
Downer, Douglas Bryant	60		5 Bay Edge Dr.
Drapos, Alexander Evangelos	58		76 June
Driscoll, Edward Francis	Ps g	Fitchburg	

Name	Classification	Home Address	Local Address
DuBiel, David Honeycutt	V G S	Lexington, N. C.	905 Main
*Duerr, Richard Clarence	58	Canton, Ohio	2 Claremont Sq.
Duffy, Robert Walter	V 57	Clinton	
Dufresne, Ernest Donald	V 60		35 Wachusett
Dunford, Frederick Francis	V 59	Millbury	
Duplisea, Eric Arthur	V 60	Newtonville	
Dupskey, Stephen Joseph, Jr.	V 58		830 W. Boylston
Duryee, Dolores	s		15 Westwood Dr.
Dworkman, Ellis David	57	Cherry Valley	
†Ede, Elwood Kossuth	60		119 Green
Edt, Mildred Helen	60		17 Frothingham Rd.
Eisenbeiser, Joseph Anthony	58	Westfield	11 Charlotte
Elefterakis, Peter John	59	Westfield	38 Cedar
Emens, Peter Farnham	58	Belmont	11 Charlotte
*Emond, Norman Richard	Ed g	Putnam, Conn.	
English, Paul Ward	57		16 Leon
Engstrom, Lincoln Loring	s	Auburn	
Erickson, Carl John	59	Fitchburg	6 Birch
Erickson, Eleanor Sylvia	58	Gardner	Sanford House
Erickson, Richard Bruce	V G g	Milford	
Erikson, Erna Marie	V 57		42 Eagan Ave.
Eriksson, Sylvie June	57		139 Ararat
Erle, Richard Aaron	Ps g	New York, N. Y.	25 Gt. Brook Valley Ave.
Evers, Jane May	60	Pleasantville, N. Y.	Blakeslee House
Faber, Bernard Lewis	59	Franklin	38 Cedar
†Falk, Joel David	60	Leominster	
Farrar, John Harris, Jr.	V 60	Shirley	
Farrell, Anne Margaret	58	Rumford, Me.	Blakeslee House
*Fedorczuk, Michael	V 57	Manchaug	
Fein, Jacques	60	Union, N. J.	Estabrook Hall
Feinstein, Rosaline Shirley	57	Bridgeport, Conn.	Blakeslee House
Felson, Everett George	60	Schenectady, N. Y.	Estabrook Hall
Fine, Arnold Marten	60		29 Monroe Ave.
Fingar, William Peter	V 58		41 Gt. Brook Valley Ave.
Finkel, William Joel	60		34 Coolidge Rd.
Finn, Norman Herbert	58		17 Arlington
Fischer, Martin Alan	58	Brooklyn, N. Y.	36 Richards
*Fitts, Richard Stanley	59	E. Brookfield	
Flexer, Abraham Sidney	59		42 Somerset
Flodman, Ronald Everett	59	Holden	
Foley, Elizabeth Mary	Ed S		192 Highland
Foley, Robert John	V 59	Flushing, Queens, N. Y.	34 Gates
†Forzley, Philip	59		287 Plantation
Foster, Elaine Elizabeth	57		394 Burncoat
Foster, Sandra Louise	60	Natick	Sanford House
*Franklin, Jeanne	Ps g	Allston	
Freed, Lawrence	57		1 Manila
Freedberg, Lois	60		65 Richmond Ave.
Friedman, Stuart David	59		32 Bridgeport
*Frieswick, Sidney Samuel, Jr.	59	Sutton	
Fulgoni, John Henry	Ed g		60 Elm
Gallagher, Edward Thomas	60	Maynard	
Galvin, Richard Francis	V 57		12 Irene
Garcin, Richard Redvers	59	Danielson, Conn.	11 Hawthorne
Garipey, Roland Edmond	V 59	Leominster	

Name	Classification	Home Address	Local Address
Garon, Diana	57	Portland, Me.	Blakeslee House
†Gassaway, Alexander R.	G F	Haverford, Pa.	41 Queen
Gaucher, Adrian Armand, Jr.	57	Southbridge	941 Main
Gauld, William John, Jr.	57		8 Oread
Gay, George Henry, Jr.	58	Southboro	
Gens, Stephen Herbert	57	Brookline	7 Hawthorne
Gentile, Patricia Ann	60		122 Blithewood Ave.
Germain, Norman William	V 58		9 Marshall
Gerrol, Robert	57		3 Bellvista Rd.
Gertler, James Seymour	V 60	Rego Park, N. Y.	6 Birch
†Gertler, Paul	60	New York, N. Y.	35 Maywood
Giannette, Marion Frances	60		32 Duxbury Rd.
*Giannini, Frank Domenic	59	Auburn	
Gibbons, William Michael	57		57 Downing
Gillies, Robert Bruce	58	Oxford	
Gillingham, Mary Elizabeth	60	Otego, N. Y.	Fanning House
Gladding, Judith Mae	58	Chester, Conn.	Sanford House
Glanzman, Bertram	59	Far Rockaway, N. Y.	875 Main
Glasgow, Jon Arthur	G S	South Vienna, Ohio	6 Downing
Glatzer, Susan Deborah	60	Rockaway Beach, N. Y.	Sanford House
Glickman, Melvyn	59		209 May
Glodis, Francis A.	60		5 Ash
†Goggin, Andrienne Landry	58	Claremont, N. H.	Blakeslee House
Gogol, John Michael	60	Westfield	Estabrook Hall
Goldberg, Esther Susan	59		59 Midland
*Goldberg, Mrs. Loretta J.	60		99 West
Goldman, Norman Howard	60		20 Beeching
Goldstein, Alan David	60		5 Van
Gordon, Bennett Samuel	58		81 Fairfax Rd.
Goretti, Sandro	V 59		3 Draper
Gorman, George Richard, Jr.	57	West Upton	
Granath, Kermit Peter	60		180 Moreland
Grandone, Roy Ferris	58	West Sutton	
Granger, Nancy Lois	60	Leicester	
Gravel, Robert Edward	60		2 Orne
Green, Phyllis Helen	Ed g		1 Lancaster Ter.
Greenberg, Harvey	60	New Haven, Conn.	Estabrook Hall
Greenberg, Mel Louis	59		36 Zenith Dr.
Gremley, Richard Leonard	V 57		480 Salisbury
Grey, David Paul	60	Brooklyn, N. Y.	Estabrook Hall
Grigas, William Anthony	V Ec g		43 Providence
Griggs, Robert Laffin	V 60	Winsted, Conn.	Estabrook Hall
Gromelski, Bradford Andrew	60	Barre Plains	Estabrook Hall
Groves, Donald Edward	V 60		12 Tracy Place
Grube, Linda	60	Putnam, Conn.	Blakeslee House
Guerin, Henry Joseph	V 57	Webster	
*Gustafson, Lois Evelyn	60	Sterling	
Gustafson, Richard Lyman	V Ch g		121 Bailey
Gustavson, Martin Arnold	58	Yonkers, N. Y.	11 Charlotte
Haas, Virginia Marie	57		21 Lorenz
Hacanis, Andrew Joseph	V 57		38 Lakeside Ave.
Hachey, Joseph Edward	58	Leominster	
Hackendorf, Martin Reinke	59	Melrose	7 Kilby
Haddad, Herbert Hoover	V 57		9 Caroline
Hadjoglou, Christine Mary	57	Webster	
*Hagberg, Kenneth Norman	V 57		34 Lakeside Ave.
Hagglund, Richard Albert	58		71 Catharine

Name	Classification	Home Address	Local Address
Hagopian, Miasnig	Ch g	Shrewsbury	
Hagstrom, Conrad Walfred	59	Millbury	
Hagstrom, Mrs. Mary F.	s		10 St. Elmo Rd.
Haling, Marie Louise	60	Southbridge	
Hall, Ralph Philip	60	West Boylston	
Hallberg, Carol Ann	59		15 Norrback Ave.
Ham, Robert Joseph	V 59		150 Beaver Brook Pkwy.
Hammer, Judith Lynn	59	Wellesley	
Hammond, Richard James	58		93 Mayfield
†Handleman, Chester	s		39 Terrace Dr.
Hansen, Richard Andrew	58	Fitchburg	100 Woodland
Hanson, Richard Allen	57	Northboro	
Hardy, Anton Gysberti	V Ps F	Manchester, Vt.	12 Claremont
Harriman, Edward Robert	V 59	Fitchburg	
Harris, Nancy Ellen	59	Baldwinsville	
Hart, Frederick Rainsford, III	59	Norwell	11 Hawthorne
Hart, Nathan Houlst	58	West Cornwall, Conn.	48 Downing
Hartman, Sandra Helene	60	Monroe, Conn.	Fanning House
Harvey, Edythe Marilyn	57	Shrewsbury	
Haskell, Elmer Roger	V 57		199 Constitution Ave.
Hassinger, Elizabeth Cecilia	s	Erie, Pa.	42 May
Hasty, Edward Holdsworth, Jr.	59		31 Brandon Rd.
Hatfield, Colby Ray, Jr.	59	Leominster	
Haupt, Carolyn Edith	57	New Haven, Conn.	Fanning House
*Haus, Sigismund	V s	Millbury	
Hayden, Marilyn Ann	G S	Methuen	7 Hawthorne
Hayes, David Goodwin	57		6 Oliver
Healey, Dorothy Jane	58		73 Downing
Heinert, Dietrich Hans	Ch S	Berlin, Germany	28 Stoneland Rd.
Helgesen, Vesta Louise	59	Sutton	
Heller, Betty Gail	58	Mt. Vernon, N. Y.	Woodland House
Henry, Nancy Eve	60	Auburn	
Hickey, Joseph Edward, Jr.	V G S	Natick	4 Hancock
Higgins, Thomas Henry	V 59	Cranston, R. I.	Estabrook Hall
Hill, Norman Richard	58	East Hampton, Conn.	43 Woodland
Hoffner, Burton Paul	57	Arverne, N. Y.	941 Main
Hopkins, Thomas Franklin	V B g	Shrewsbury	
Horne, Burton	60	Waban	Estabrook Hall
Horvath, Joseph Erving	59	New Brunswick, N. J.	989 Main
Hovey, Richard John	Ch F		114 Dana Ave.
Howard, Millard Allen	58	Palermo, Me.	100 Woodland
*Hsu, Chao Fan	Ec g	Taipei, Formosa	24 Oread
Hubbard, Winifred Ray	s	West Boylston	
Huka, Elisabeth Cornelia	G g	Djakarta, Indonesia	143A Woodland
Humphries, Ogretta Ann	Ps F	Washington, D. C.	15 Gates
Hunter, Gilbert James	G F	Detroit, Mich.	34 Gates
†Hunter, Judith	s	Shrewsbury	
*Hutchins, Sandra Ann	59	Grafton	Sanford House
Hutchinson, Wanda Joanna	59	Sharon, Conn.	Fanning House
Hutchinson, William Albert	V 58		8 Beckman
*Hyler, Earl Stewart, Jr.	58	Portland, Me.	100 Woodland
Iacovone, Julio James	V 57		35 Providence
Inglessis, George Griton S.	Ch F	Athens, Greece	8 Crystal
Intorre, Benjamin Joseph	V Ch S	Brooklyn, N. Y.	42 Lakeside Ave.
Isaac, Donald Marvin	Ps g	Bronx, N. Y.	52 Beaver
Jablonski, Stephen Frank, Jr.	V 58	Webster	

Name	Classification	Home Address	Local Address
Jackson, Harold Christiernin, Jr.	V 58		89 Eunice Ave.
Jackson, Kenneth Warner	59		54 Woodland
Jackson, Meredith Lee	58		54 Woodland
Jackson, Merrilee Ann	58	Watertown, Conn.	Fanning House
Jackson, Robert Elliott	59	Maynard	44 Brantwood Rd.
Jackson, Stephen	58	Newtown, Conn.	12 Fern
Jagolinzer, Philip	58	Pawtucket, R. I.	6 Wyman
James, Herbert Isidor	Ch S	New York, N. Y.	7 Newbury
Jenkins, Judith Ann	60	Albany, N. Y.	Fanning House
Johanson, June Ingrid	57	Wassaic, N. Y.	Blakeslee House
Johnson, Carle Albert, Jr.	57	Laconia, N. H.	21 Richards
Johnson, Clarke Dana	V 58	Lynn	
Johnson, Donald Melvern	V 58		16 Westminster
*Johnson, Lane Joseph	V G F	Denver, Colo.	24 Greenwood St., Marlboro
†Johnson, Nancy Ann	Ed g		447 Grove
Johnson, Philip Fritz	V 60		181 Lake Ave.
Johnson, Richard Skerry	V 57	Jefferson	
Johnson, Robert Arthur	V 57	Sutton	
*Johnson, Robert Frederick	59	Rutland	
Johnson, Roger	V 60	Glastonbury, Conn.	Standish Hotel
Johnson, Shirley Ann	59	Roslyn, N. Y.	Woodland House
Johnson, Wayne Perley	V 60		43 Minthorne
Jolie, Richard Norman	57	Auburn	
Jordan, Edward John, Jr.	Ps g	Hamden, Conn.	25 Catharine
Josephs, Barry Steven	59	New Haven, Conn.	40 Richards
Josephy, Leslie	59	Flushing, N. Y.	875 Main
*Jungmann, Henry	V 57	Rangeley, Me.	13 Gates
Kacandes, Pearl George	58	Neptune, N. J.	Blakeslee House
Kagan, Richard Alan	58	Medford	145 Woodland
Kajander, Vivian Sylvia	57	Gardner	Fanning House
Kallio, Mrs. Signe Maria	s		18 Kosta
Kaloosdian, Knarig Pauline	59	Watertown	Fanning House
Kane, Barbara Therese	60		48 Ames
Kane, Benson	B g		92 June
Kane, Paul Wayne	59		173 Beacon
Kaplanes, Helen Thomas	60		34 Commodore Rd.
Karagosian, John Haig	V 58	Whitinsville	
Karno, Maartini	G g	Djakarta, Indonesia	143A Woodland
Kasparian, Cynthia	60	Whitinsville	
Kasperson, Roger Eugene	59	Northboro	
Katori, John Nasto	V 57	Webster	
Katz, Herman Nathan	60	Lakewood, N. J.	Estabrook Hall
Katz, Ruth Margaret	59	Bridgeport, Conn.	Blakeslee House
Kazarian, Michael	V 59		17 Bancroft
Keating, John Joseph	58	Fitchburg	6 Downing
Keith, Stephen George	59	Monson	28 Marble
Kelley, Charline Mary	60	Petersham	47 Sever
Kenefick, Mrs. Barbara Ann	Ps g	Brookline	
Kennedy, William Aylsworth	58		52 Howland Terrace
Kent, Joyce Micaela	58	Millbury	29 Laconia Rd.
Kezal, Joseph Peter	58	Rumford, Me.	905 Main
Kiakis, Helen	57		16 Healy Rd.
*Killian, Dale Van Campen	s		11 Lancaster
Kim, Ha Poong	58	Hambuk, Korea	70 Maywood
†Kim, Tai Dong	60	Seoul, Korea	6 Downing
Kinell, Edwin Ellis	57		2 Longmeadow Ave.
Kingsbury, Mrs. Virginia H.	59		24 Maywood

Name	Classification	Home Address	Local Address
Klein, Mrs. Charlotte Z.	58		46 May
Klein, Judith Libby	59		5 Montvale Rd.
Klem, Bernard Alan	57	Framingham	
Klinger, Lawrence Allan	58	Bronx, N. Y.	3 Albert
Klutey, Frederick E., Jr.	60	Wilmington, Del.	Estabrook Hall
Knight, William Walton, III	57		11 Monadnock Rd.
Kokernak, John Francis	60		45 Sigel
Koki, Arthur Samuel	60		35 Gardner
Kontaxopoulou, Despina P. S.	60	Athens, Greece	46 May
Korstvedt, Arne Jens	V Ps g	Port Chester, N. Y.	52 Beaver
Kostreba, Anthony John	V 58	Palmer	
Kraidman, Emma	Ps g	Brooklyn, N. Y.	207 Park Dr., Boston
Kraus, Michael Alan	60	Far Rockaway, N. Y.	Estabrook Hall
Krauss, Jean Carol	60	Norwich, Conn.	Woodland House
Krivy, Leonard Philip	H F	Brooklyn, N. Y.	78 May
Krus, Donald M.	V Ps g F	Haledon, N. J.	56 Bowdoin
Kujala, Shirley Mae	Ed g	Holden	
Kunawat, Rajnikorn	G S	Bangkok, Thailand	46 Tirrell
Kuniholm, Thor Hilding	H g	Gardner	143 Woodland
Kusik, Mairi Janette	58	Richmond	Sanford House
Laakso, William Bruce	57	Gardner	35 Maywood
*LaConte, Richard Bruce	59		25 Hollywood
Lacoste, Roger Gerard	Ch g		37 Alvarado Ave.
LaFosse, William Donald	60	Fitchburg	
*LaHair, Richard Edward	s		45 New Vista Lane
Lajeunesse, Roger Lucien	V 57	Putnam, Conn.	
†Lamar, Richard Mirabeau	Ed g	Osterville	40 May
Lamberto, Nunzio Anthony	V 57	Clinton	
Lamoureux, Kent Butler	60		30 Blaine Ave.
Landau, Rachel	58	Tiberias, Israel	6½ Richards
Lander, Mrs. Barbara Jean	57		58 West
Langille, Carolyn Margaret	58		6 Lansing Ave.
Langley, Kay Frances	59	Newport, Me.	156 Woodland
Lapato, John	V 58	Berlin, N. H.	37 May
Larson, Barbara Ann	59		32 Trowbridge Rd.
Larson, John Joseph	58		Path. Lab., Worc. State Hosp.
Larson, Kenneth Gordon	V 60	Auburn	
Latino, Anna Teresa	57		8 Channing
LeBoeuf, Mrs. Janine Anne	58	Dudley	
Lee, Arthur Brown, Jr.	57	Brooklyn, N. Y.	6 Freeland
Leinwand, Myrna Diane	60	Woodside, N. Y.	Fanning House
Leonard, Louise Ruth	60	Shrewsbury	
Les, Frederick Joseph	V 58	Clinton	
Levison, Bruce Edward	57	Brookline	6 Gates
Lewandowski, Frances Celine	60		23 Arlington
Liedes, Liisa Annikki	58	Fitchburg	
Lightfoot, William I.	60	Hudson	
Lindberg, Bruce Allan	V 58	West Boylston	
Lindgren, Richard Einar	59		24 Indian Hill Rd.
Lingner, Robert Earle	G g		220 Webster
Lingner, Mrs. Sally M.	Ed g		220 Webster
Lipkin, David Lawrence	57	Brooklyn, N. Y.	36 Richards
Litsky, Joan Ann	57	Waterbury, Conn.	Woodland House
*Lockhart, Richard Arnold	V G S	Waltham	10 S. Buffum
Lockhart, Robert Earl	59	Fitchburg	6 Birch
Loewus, Ann Lee	59	Washington, D. C.	Woodland House
Logue, Donna Marie	57	Marcellus, N. Y.	Fanning House

Name	Classification	Home Address	Local Address
Lombardi, Edward Joseph	58	Methuen	16 Gates
Look, Frank Milton	V 57		19 Harvard
†Loosli, Mrs. Sabina	B g		173 Woodland
Loubier, Eugene Emile	V 57		68 Boylston
Loughlin, John Leo	V 57	Shrewsbury	
*Lovering, Richard Starbuck	V 58	Arlington	23 Hollywood
Lubitski, Carl James	57	Oakville, Conn.	16 Marble
Lundstrom, Robert Edward	59	Millbury	
Lyon, Anthony Edward	60	Franklin	
Lyons, James Francis	V 57		12 Scott
MacDonald, David James	60	Athol	926 Main
MacKown, Stuart Alden	60	Concord, N. H.	Estabrook Hall
MacRae, Theodore N. U.	V 59		5 Ralph Ave.
Madigan, Kathleen Ann	60	Harvard	2A Marble
Madigan, Thomas Edgar	G F	Wilmington, Ohio	433 Park Ave.
Madnick, Ronal Cyril	59		11 Crown
Magoon, Albra Louise	59	Manchester, N. H.	Woodland House
Mahoney, Mary Elizabeth	60	Concord, N. H.	3 Lucian
Mailloux, Thomas Robert	V 58	Gardner	
Maki, Roberta Elaine	58	West Sterling	
Makler, Herman Abraham	V 57	Belmar, N. J.	20 Gates
Maloney, Patricia Ann	59		94 Hamilton
Mammo, Mekbib	59	Harar, Ethiopia	112 Woodland
Mandell, Naomi Block	Ed g		47 Sagamore Rd.
Mank, Herman Leonard, Jr.	60	S. Ashburnham	Estabrook Hall
Mann, Stanley Joseph	V s B g	Ithaca, N. Y.	8 Freeland
Mara, William James	V Ed g S		16 Montague
*Marcus, Harold Golden	58		5 Havelock Rd.
Margulis, Stephen Tash	Ps S	Bronx, N. Y.	1020 Main
Marks, Milton Stanton	V 57		2 Ureco Terrace
Markun, Geraldine	59	Brookline	Fanning House
Markus, Mrs. Klaudia	G g	Charlottesville, Va.	74 Woodland
*Marsh, William Alfred	Ev		R.F.D. 178
Marshall, Thomas Swank	V 59	Averill Park, N. Y.	10 S. Buffum
Martin, Francis Hall, Jr.	59	Brookfield	
Mass, Frederick Leon	60	Far Rockaway, N. Y.	Estabrook Hall
Matusaitis, Vida Regina	58		4 Vernon Terrace
Maurais, Henry Adelard	M S	Chisholm, Me.	38 Stoneland Rd.
Maxham, David Earl	57	Worcester, Vt.	16 Marble
Mayer, Joseph	V Ps. g	Brookline	
Mayo, Mrs. Clara Weiss	Ps F	Nashua, N. H.	
Mays, Lois Ann	58		30 Elliott
*McBride, Oliver Sullivan	V 59		52 Queen
*McCrohan, Ronald Edward	59		147 Providence
McCune, Jay Earle	60	Cambridge	Estabrook Hall
McFarland, Joseph Henry	Ps F		127 Institute Rd.
†McGachie, Harry Leo	H g	Brookline	20 Gates
McGurran, Jane Ann	58		2 Germain
*McManus, Leo Francis, Jr.	V Ps g	Fitchburg	Bancroft Hotel
McMeneny, Joan Eileen	60		35 Laurier
McMillan, Donald C.	Ed g		43 Oberlin
*McSherry, Francis J.	s		982 Main
*McSherry, Walter Thomas	H g		982 Main
Melville, Gwendolyn Irene	59	N. Wilkesboro, N. C.	33 Vincent Ave.
Mendelsohn, Joseph Meyer	V Ch F	Revere	37 May
*Mesfin, Wolde Mariam	G g	Addis Ababa, Ethiopia	25 Oread Pl.
Messing, Robert	59	Brooklyn, N. Y.	145 Woodland

Name	Classification	Home Address	Local Address
Micuta, Jurate Emily	58		159 Vernon
Mielke, Janyce Anne	58	Durham, Conn.	Woodland House
Miller, Arnold	Ps s		827 Pleasant
Miller, James Merle, Jr.	V H F	Kansas City, Mo.	10 Linden
Miller, Mary Ellen	59	Cherry Valley	
Miller, Stuart Robert	58	Brooklyn, N. Y.	10 Crystal
Miller, Susan Peckham	59		36 Sever
Millington, Richard John	V 57		168 Tacoma
Mitchell, Robert Arnold	59		20 Tirrell
Moberg, David Henry	V 58		59 Clark
Moe, Helga Elizabeth	60	Elsmere, N. Y.	Blakeslee House
Mohyman, Hamid	s	Teheran, Iran	766 Main
Moniz, James	Ec F		27 Henshaw
Montgomery, Robert Eldredge	59	Norwich, Conn.	24 Richards
Mooradian, Robert Myron	H S	Troy, N. Y.	86 Woodland
Moore, Thomas Francis, Jr.	V 59		29 Freeland
†Mooshagian, Madieros	Ed g		16 Bluff
Moossa, Walter Francis	58	Holden	
Moreau, Claudette Therese	58	Pawtucket, R. I.	Woodland House
Morin, Wilfred William, Jr.	58	Millbury	
Morrison, Donald Lyman	57	West Millbury	
Morrow, Barbara Anne	58	Monson	Woodland House
Mosher, Edward Francis, II	V 57	Rockland, Me.	16 Marble
†Moule, Elaine Dorothy	60	Auburn	
†Mourginis, Constantine Louis	Ed g	Holden	
Mullin, Arthur Leonard	V Ed g	Southborough	
Murakami, Yukito	Ch F	Tokyo, Japan	2 Ripley Pl.
Murphy, Michael Griswold	60	Wethersfield, Conn.	Estabrook Hall
Murray, Anne Ruth	60	Northboro	
Myska, Frank Burton	V 57	Rutland	
Namuj, Marcos Yacoub	59	Jerusalem, Jordan	112 Woodland
Napolitano, Joseph Ernest	V 57	Long Island City, N. Y.	17 Crystal
Nathan, David	59	Far Rockaway, N. Y.	40 Richards
Natoli, Salvatore John	V G F	Reading, Pa.	4 Hancock
Navickas, Margaret Ann	60		36 Palisades
Nelson, Charles Herbert	60		112 Mill
Nelson, Joyce Marie	58		87 Fairfax Rd.
Nichols, John Francis, II	57		6 Gates
Nichols, Mrs. Yukiko S.	57		6 Gates
Nicholson, Mrs. Clara K.	H F		81 Providence
Nickel, Herbert Joseph	Ps g	Baltimore, Md.	15 Beecher, Jamaica Plain
Nidorf, Louis Joseph	Ps F		45 Hilltop Circle
Nikitas, Theodore Michael	V 59	Fitchburg	10 Crystal
Nugent, Gerald Francis	V 58		37 Vineyard
O'Connell, John Joseph	Ch g	Westboro	
*Odenigwe, Godwin Anibeze	H F	Nigeria, West Africa	50 Woodland
O'Donnell, Myles Leo, Jr.	H S	Portland, Me.	73 May
Oertly, Frederick Jay	60	Norwalk, Conn.	31 May
*O'Hara, Paul Frederick	V Ec g		32 Clement
Ohwaki, Sonoko	Ps F	Sendai, Japan	35 May
Oickle, George Bradford	58		26 Heroult Rd.
O'Learn, Carol Anne	60	Ramsey, N. J.	Sanford House
O'Leary, James Daniel	V Ed g S		6 Stevens Rd.
*Olson, Marjorie Louise	57		265 Lovell
Olson, Robert Leonard	V 58	Auburn	
Olund, Robert Nils	58	Auburn	
O'Neil, John Joseph	V Ed g		23 Plantation

Name	Classification	Home Address	Local Address
Oppenheimer, Laurence	60	Kew Gardens, N. Y.	21 Havelock Rd.
Orrell, David Livingstone	58	Whitinsville	
O'Toole, William Francis	58		73 Wyola Dr.
Pacek, Stanley Edward	V 59		1 Pitt
Paik, Kumok	60	Seoul, Korea	Woodland House
Palmer, Judith Ann	57		20 Brookman
*Paltrineri, Paul, Jr.	57	Wellesley Hills	7 Kilby
*Pantos, Ernest John	59		84 Coolidge Rd.
Park, David Alexander	V 59	Shrewsbury	
Park, Won Taik	59	Seoul, Korea	24 Richards
Parmenter, Franklin David	57	Orange	17 Crystal
Pasceri, Gregory John	V 59	Clarksburg, W. Va.	766 Main
*Patch, Carol Ann	58	Bristol, Conn.	Woodland House
Pawlina, Frank Edwin	V 57	Woonsocket, R. I.	
Pearson, Robert Stanley	V 59		22 Sturgis
Peirce, David Allen	V 57		38 Benefit
Pendleton, Jesse L. S.	G S	Brooklyn, N. Y.	7 Newbury
Perkett, Nancy Edith	60	Willsboro, N. Y.	143 Woodland
*Perry, Francis Xavier	V 58		164 Chino Ave.
Peters, Donald	V 58		332 Coburn Ave.
Peterson, Lee Kent	58		5 Reeves
Petridis, Adrienne Elizabeth	57	Hyannis	Fanning House
Phares, Carl, III	60	Sarasota, Fla.	Estabrook Hall
Philip, Philip Louis	V 57		13 Scott
Pierce, John Sturtevant	59	Leominster	100 Woodland
Pinchak, Joan Ruth	57	Paterson, N. J.	Fanning House
Pitt, John Ronald	57		54 Catharine
Plich, Mrs. Anna S.	Ed g		15 Iowa
*Podell, Mrs. Harriet A.	Ps g		17 Garland
Podell, Jerome Edward	V Ps g		17 Garland
*Poland, Diane	59		41 Dixfield Rd.
Polhemus, Ellen Anne	58	Belvidere, N. J.	Fanning House
*Porter, Mrs. Elia Frances	Ed g	Charlton City	
*Porter, Gerald Donald	V 57		167 Pleasant
Potash, Ethel Jean	59		59 Westview Rd.
Potter, Elaine Isabel	G g	Dalton	24 Gates
†Potter, Spencer Romeyn	V Ed g	Leicester	
Power, Patricia Rose	57		114 Brookline
Press, Marshal Alvin	60	Leominster	Estabrook Hall
Press, Russell George	59	Wethersfield, Conn.	Estabrook Hall
Price, Malcolm Ivan	57	Clinton	
Proffitt, George Henry	V 57		53 Wyola Dr.
Provo, Theodore Louis	59		294 Stafford
Purdon, Gerald Ross	H g	Merrick, L. I., N. Y.	11 Hawthorne
Raila, Ruth Ann	59		53 Fountain
Rako, Julius	58	New York, N. Y.	36 Richards
Rand, Leroy Warren	H g	Portland, Me.	1 Englewood Ave.
Raphaelson, Arnold Herbert	V Ec F		20 Garland
Raphaelson, Elliott	59		18 Derby
Raphaelson, Milton Howard	V 57		44 Lakeside Ave.
Rappa, Robert Joseph	58	Franklin	
Raymond, Susan Celistany	Ps S	Schenectady, N. Y.	15 Gates
Razansky, Donald Brian	59	Newburgh, N. Y.	16 Gates
Redford, Harvey Roland	60	Far Rockaway, N. Y.	Estabrook Hall
Ree, Han Soon	G S	Taegu, Korea	4 Englewood Ave.
Reed, Ivan Leon	58	Clinton	

Name	Classification	Home Address	Local Address
Rehfeld, Joan Audrey	59	New York, N. Y.	Fanning House
Reilly, James Alfred	58	Shrewsbury	
*Rembiszewski, Joseph Paul	59		128 Endicott
Remmer, Harvey Ira	58		78 Upsala
Reschke, Oures Paul	V 58		92 Chino Ave.
Resh, Fred Leonard	57	Providence, R. I.	17 Crystal
Resnick, Idrian Navarre	58	Buffalo, N. Y.	36 Richards
Resnick, Michael David	60	West Hartford, Conn.	Estabrook Hall
Reta, Tye W. G.	59	Harar, Ethiopia	41 King
Rho, Mann Que	59	Seoul, Korea	22 Richards
Ribak, Barbara Sue	60	Forest Hills, N. Y.	Sanford House
Ribb, Cynthia Marie	58		18 Chevy Chase Rd.
Rice, Jerald Arthur	58	Millbury	
Richard, Alfred Joseph	Ch F		130 Woodland
Richards, Brendon William	V 59	No. Oxford	
Richardson, Anna	58	Wellesley	4 Westwood Dr.
Richardson, Nancy	59		411 Burncoat
Richmond, Bradford Lewis	60	Taunton	Estabrook Hall
Riordan, Pauline Ellen	G S	Milton	24 Gates
Robidoux, Richard Ernest	59	Brookfield	
Robinson, Betty Ann	59	Washington, D. C.	Sanford House
Robinson, Mrs. Sallie E.	58		14 Surrey Lane
Rockwell, Dale Lawrence	59	Groton, Conn.	Estabrook Hall
Roesmer, Josef	Ch F	Mainz, Germany	939 Main
Rogers, Albert Paul	Ed g	Maynard	Worc. Boys Club, Lincoln Sq.
Rogers, William Francis	59	Leominster	16 Marble
Rogstad, Ronald Harry	57	Winchendon	35 Maywood
Romo, Charles Donald	60	Peabody	Estabrook Hall
Ronberg, James Frank	60	Woodbridge, Conn.	Estabrook Hall
Rosen, Muriel Stephanie	60	Passaic, N. J.	Fanning House
Rosenberg, Henry Ernest	Ch F	Hempstead, N. Y.	42 May
Ross, Barbara Louise	60	Miami, Fla.	Woodland House
Rossinow, Edward	58	Brooklyn, N. Y.	36 Richards
Rossley, Paul Robert	60	Leicester	
Rossner, Morton	59	Levittown, N. Y.	21 Shirley
Ruddy, Edward Raymond	60	Rutland	
Rugh, Patricia Joan	60	Manlius, N. Y.	Sanford House
†Ryan, Jane Heaton	Ed g	Webster	
Ryan, Joseph Gerald	60	Methuen	Estabrook Hall
*Sacovitch, William James	58		8 Quinsigamond Ave.
*Sadowsky, Mrs. Rachel E.	59		87-2 Park Ave.
St. George, Robert Joseph	V 57	Warren	
St. Jean, Diane Barbara		Auburn	
St. Onge, Remi Louis	V 57	Southbridge	
Saitas, James John	V 57	Putnam, Conn.	
†Salomon, Susanne Dorothea			40 Midland
Salvin, Leonard	60		106 Perry Ave.
Sandrew, Stuart Howard	59	Pittsfield	3 Wyman
Sandy, I. Made	G g	Denpasar, Indonesia	112 Woodland
Santoian, Barbara Ann	60		8 Sunnyhill Dr.
Sarando, Stephen Plato	59		12 Page
Sargent, Bradford Howard	60	Charlton	54 Westview Rd.
*Saulenas, Frank V.	Ev		84 Burncoat Ter.
Saunders, Ralph Howard	V Ec g		18 Auburn
Sawtelle, Robert Ulysses	V 57		25 Morningside Rd.
Schalck, Harry George	V H F	Reading, Pa.	1 Sycamore
Scheel, Eugene Mehlman	57	New Rochelle, N. Y.	35 Maywood

Name	Classification	Home Address	Local Address
Schoenfeld, Norman	59	Haverhill	21 Shirley
Schofield, Edmund Acton, Jr.	60		21 James
Schoolman, Leonard Arthur	57	Mt. Vernon, N. Y.	36 Richards
Schrader, Hugh D.	60	Catskill, N. Y.	10 Birch
Schwalb, Theodore Josiah	60	Marblehead	Estabrook Hall
Scola, Angelo Ralph	59		602 Salisbury
Scott, William John	60	Templeton	
Sears, Richard Duncan	V 60	Williamstown	10 Birch
Seifer, Joan Rita	59	Hudson	Woodland House
Seligman, Frederick	57	Rego Park, N. Y.	6 Freeland
Semone, Ronald Cecil	60		6 Whittier
Sergeant, Dorothy Joan	57	Rutland	6 Howatson Way
Sergeant, Lois Jane	60	Rutland	1 Metcalf
Shain, Marjorie Ruth	60	Waban	Fanning House
Shannin, John	58		21 Richards
Shapiro, Bernard David	57	Forest Hills, N. Y.	36 Richards
Shapiro, Paul Jay	57	New Haven, Conn.	36 Richards
Sheleg, Boris	V Ph g		4 Minthorne
Sherbaniuk, James Alexander	Ec S	Vegreville, Alberta, Can.	11 Hawthorne
Sherman, John Morton	V G S	Norwalk, Conn.	28 Hollywood
Shields, Rosemary	60	No. Westport	Fanning House
Sidel, Linda Joan	60	Mattapan	Fanning House
Siegel, Stephen Jeffrey	58	Mt. Vernon, N. Y.	3 Albert
Silver, Michael	58		16 Edgewood
Silverberg, Jerry Steven	H g	Hartford, Conn.	914 Main
Sinnery, Donald James	57		2 Ontario
Siok, Barbara Ann	58	Clinton	
Skelton, Frederick Stevens	s	Winchendon	2 Claremont Sq.
*Slater, Donald William	58	New York, N. Y.	42 Somerset
Slepian, Howard Joseph	V Ps g		16 Congress
Slyder, Barbara Louise	59	Emporium, Pa.	Blakeslee House
Smalanskas, George Joseph	V Ed g		32 Woodward
Smelewicz, William Patrick	V 57		3 Ingalls
Smith, Carol Gladys	60	Auburn	
Smith, Donald Lynwood	V Ed g	Auburn	
Smith, Douglas Atkinson	59	Holden	
Smith, Joel Anderson	60	E. Douglas	
Smith, Laurence Cortelyou, Jr.	Ps S	Canaan, Conn.	Marty's Trailer Ct. Rt. 20
Smith, Theodore Reuben	57	Bronx, N. Y.	40 Richards
*Smith, Venice Mae	s	Farnumsville	
Snyder, Alan Michael	57	Staten Island, N. Y.	16 Gates
Snyder, Betty Ann	59	South Lancaster	
Sokov, Irving Bernard	V 57	Dorchester	
Sommer, Ruth Elaine	60	E. Norwalk, Conn.	Sanford House
Soncini, Giorgio	Ec S	Milan, Italy	25 Oread Pl.
Sorenson, Richard	V 57		310 Coburn Ave.
†Sotir, Sam Vangel	60	Southbridge	
Spector, Harvey Benjamin	60	New Haven, Conn.	Estabrook Hall
Speier, Sybil Dorothy	Ps F	Washington, D. C.	35 Peterborough, Apt. 50 Boston
Speiser, Marc Herbert	59	Far Rockaway, N. Y.	Estabrook Hall
Sprott, Gwendolyn Rowena	60	Dudley	
Spurr, Arnold Newton	57	Southboro	
Stanick, Carol Elizabeth	59		76 Commonwealth Ave.
Stannard, George Edward	M g	Paxton	
Stanton, Betty Ann	58	Clinton	
Stapakis, William Steven	Ec g S	Hartford, Conn.	31 Lancaster
Starzyk, Frederick Henry	V 57	Framingham	

Name	Classification	Home Address	Local Address
Stavros, Mrs. Anna K.	Ed g		188 Institute Rd.
Steele, Frederic Lewis	58	Boxboro	16 Marble
Steffon, Mary Ann	58	Grafton	
Steiman, Philip	60		5 Claridge Dr.
Stein, Harold Charles	58	Hudson, N. Y.	36 Richards
Stein, Robert Allan	60	New York, N. Y.	Estabrook Hall
Steinberg, Mrs. Edith B.	57	Manchester, N. H.	314 Highland
Steinberg, Lloyd Bernard	57	Scarsdale, N. Y.	11 Charlotte
Steinberg, Morton	V 57		314 Highland
Steinberg, Norman	57		31 Woodford
Stenmark, Erik Einar	60		50 Kendall
Stevens, Dean Finley	s	Northboro	
Stockhaus, Robert Alexander, Jr.	60		29 Ekman
Strandberg, Arne Eric, Jr.	V 59	Shrewsbury	
Strandberg, Victor Hugo	57	Shrewsbury	
Strumpf, George Bernard	59	Lynbrook, N. Y.	875 Main
Sudol, Lorraine Agnes	59	East Rutherford, N. J.	Sanford House
Suh, Sang Chul	59	Choong-Nam, Korea	7 Kilby
†Sullivan, Edward Patrick	V 57		466 Park Ave.
Sullivan, Maureen Elizabeth	59	Springfield	12 Benefit
Sullivan, Michael Vincent	V 59		25 Shirley
Sullivan, Robert James	V G g		7 Lund
†Sund, Mrs. A. Ingeborg	s		118 Tacoma
Sundheim, Gail Marie	60		205 Stafford
*Sundquist, Birgit Marie	B s		53 Uncatena Ave.
Surdi, Sylvia Leonarda	Ps g	Bloomfield, N. J.	49 Brownell
Svenson, John Alf	60		34 Lincoln
Sweet, Nancy Kathleen	60		187 Pleasant
Swenson, Carl Robert	V 57	Sterling Jct.	
Switzer, Janet	Ps g	McPherson, Kansas	85 Chatham
Symonds, Merrill Augustus	Ed g		283 Beverly Rd.
Takeuchi, Nobuhiko	57	Nishinomiya, Japan	35 Maywood
Teixeira, Leonard F.	V 58	Hudson	
*Teng, Yuan Chung	H F	Taiwan, China	6 Isabella
*Terwilliger, Ann Louise	59	Glastonbury, Conn.	Fanning House
Teshoian, Sarkis	58		20 Abbott
Thomas, Daniel Walter	Ch F		5 View
*Thompson, Harold Godfred	Ch g	Shrewsbury	
†Thompson, William Francis	V G g	Framingham	
Toder, Phyllis Sally	59	Bronx, N. Y.	Fanning House
Topkin, William Elliot	60	Mystic, Conn.	Estabrook Hall
Toussaint, Joseph Ludger	V 57	Fort Kent, Me.	50 William
Tozeski, Stanley Paul	60	Shrewsbury	
*Trethewey, Ralph Stanley	V 57	Grafton	
Troianello, Emilio Joseph	Ch F	Lawrence	40 Richards
Tsefrekas, Angelo	s		187 Highland
Tsourides, Konstantine Nicholas	58		84 Madison
Tucker, Barbara Ann	57		40 Brighton Rd.
*Tucker, Marvin Estes	V 59	Brookfield	
*Tully, Edward Luke	H g	Harvard	
Tuppa, George John	V 59		7 Blanche
Tyroler, Ronald Samuel	60	Jamaica, N. Y.	Estabrook Hall
Tyson, William Reynier	V G s	Wayne, Pa.	9 William
Uesaka, Yasuo	60	Meguroku, Tokyo, Japan	6 Downing
*Upbin, Sandra Freida	59	Hewlett, N. Y.	Woodland House
Uskokovic, Milan Radoje	Ch g		58 West
Utsunomiya, Takeshi	57	Tokyo, Japan	19 Ripley

Name	Classification	Home Address	Local Address
Vaitiekaitis, Anastasia	59		51 Coral
Vandersea, Nancy Ann	59	Whitinsville	
vanLeeuwen, Philip Carleton	57		9 Euclid Ave.
VanRoy, Edward	60	White Plains, N. Y.	Estabrook Hall
Vardzal, Mary Barbara	59	Union, N. J.	Sanford House
Vecchione, Patricia Mae	60	East Douglas	
Vick, Kenneth Stuart	V 58	Shrewsbury	
Vierstra, Katherine Joyce	59	Whitinsville	
Vinkemulder, Charles Bradley	V 57	E. Grand Rapids, Mich.	11 Loudon
Vogel, Peter Frank	59	Teaneck, N. J.	40 Richards
Vogel, William	Ps g	Laurelton, L. I., N. Y.	138 Woodland
*Vuona, Peter	59		333 Salisbury
Wabrek, Alan John	59	Manchester, Conn.	24 Beaver
Wagner, Paul Roy	60	Fitchburg	Estabrook Hall
Walker, Barry Jay	58		37 Creswell Rd.
Walker, Philip Edward	V 58		15 William
Walker, Thomas Payson	60	Athol	Estabrook Hall
Wallenfels, Helmut Bahnstrabe	60	Stuttgart, Germany	Estabrook Hall
Walsh, Cornelius Francis	60		57 Cedar
Warfield, Joan	57		21 Arletta Ave.
Wastila, William Bruce	60	Leicester	
Waterhouse, Mrs. Jane W.	58	Holden	
Watstein, George Joseph	60	New Haven, Conn.	Estabrook Hall
Waxman, Norman	58	New York, N. Y.	36 Richards
Wehrli, Robert William	V 59	Auburn	
Weinberger, Leon Judah	57		19 Field Way
Weiner, Leonard Baruch	59	Brooklyn, N. Y.	875 Main
Weisenberg, Gerald Melvin	57	Bellerose, L. I., N. Y.	42 May
Werner, Stephan Lionel	60	Brooklyn, N. Y.	Estabrook Hall
Wetherbee, Otis Charles	60	No. Grafton	
Whitaker, David Alan	59		64 Alsada Dr.
Wickham, Vincent Schofield	s		50 Sherburne Ave.
Wilensky, Barbara Dee	58		7 Argyle
Wiley, Richard Terence	V 57		979 Main
Willey, Roy Chester	59		30 Ararat
Wilson, Louis Moore	60	Sherborn	Estabrook Hall
Wilson, Robert Bruce	V 58		28 Merrick
*Wofford, Elois Juliette	H S	Cleveland, Ohio	6 Home
Wood, John Herbert	V Ec S		448 Mower
*Wray, Norman Leslie	57	Spencer	
*Wright, Robert Lewis	57		148 Dewey
Xanthakos, Jeanne Demetria	59	Southbridge	
Yahnian, Ovsanna Haroutioun	58		626 Southbridge
Youman, Toby Esther	60	Medway	Sanford House
Young, Donald Roland	57	Arverne, N. Y.	36 Richards
Young, George Frederick	59	Manhasset, N. Y.	16 Marble
Yun, Seung Soo	57	Seoul, Korea	8 Berwick
Yusuf, Kanib Fatima	G S	Lahore, West Pakistan	37 Freeland
Zaini, Nadirsjah H. A.	G g	Lampung, Indonesia	46 Tirrell
Zambarano, Paul Joseph	58		1 East Park Ter.
Zanoni, Dante Romeo	V 58	Norway, Maine	16 Marble
Zarr, Gerald Howard	59		17 Kilby
Zarr, Melvyn Herbert	58		17 Kilby
*Zbikowski, Stella Ursula	60	Gardner	5 Lucian

Name	Classification	Home Address	Local Address
Ziarko, Margaret Ann	57		38 Whitcomb
Ziegler, Barry Michael	59	New York, N. Y.	102 Downing
Zraket, Frederick Anthony	V 58	Lawrence	11 Hawthorne
Zulauf, Donald Cole	58	Tenafly, N. J.	36 Richards

I (2). STUDENTS IN RESIDENCE LESS THAN ONE SEMESTER

Bahe, Mrs. Paula McElroy	s	Holden	
Baker, Joyce Ann	57	South Yarmouth	9 Aylesbury Rd.
Blumfeldas, Vidmantas Konstantinas	60		3 Blake
Bye, John Fiske	V 60		69 May
Davidson, James Paul, Jr.	V 59	Dracut	166 Summer
Desjardins, Robert Alfred	V 57	Lowell	35 May
Diamantopoulos, Michael Peter	V 59		40 Gt. Brook Valley Ave.
Driscoll, John McInerney	58		121 Tacoma
Dufault, Claude Bernard	V H g	Spencer	
Hevy, Janet Rosamond	60	North Brookfield	Sanford House
Hutton, Doris Anne	59	Staten Island, N. Y.	Sanford House
Isabelle, Roger John	V 60		7 Kilby
Kinsley, Roland Andrew	V 58	Mendon	
Krock, Barry Lawrence	s		4 Rollingwood Dr.
Lapriore, Gaetano Vincent	60		43½ Eastern Ave.
Ledwell, Paul Edward	V 58	Fairhaven	25 Freeland
Norman, Mrs. Margaret A.	58	Hopedale	
Peavey, James Smith	V 58		279 Hamilton
Santora, Michael Anthony	V Ed g	New York, N. Y.	16 Claremont
Slack, Richard Leo	V 59	North Uxbridge	
Stark, Claude Alain	58	Holden	
Swetnam, Mrs. Mary D.	s		42 Minthorne
Terrasi, Francis William	M g	Boylston	
Ulacia, Anthony Valentine	V 60	Shrewsbury	

II. SUMMER SCHOOL STUDENTS — 1956

Aaron, Alan D., New York, N. Y.	Bostic, Mrs. Corrine E., Worcester
Adams, Mrs. Muriel C., Washington, D. C.	Bouffard, Norman A., Worcester
Ahearn, William E., Wassaic, N. Y.	Boykin, Evelyn R., Worcester
Almeida, Silverio P., Worcester	Boyle, Harry A., Jr., Worcester
Anderson, Carl E., Worcester	Braunstein, Victoria J., Worcester
Anderson, Russell W., Worcester	Breault, Mrs. Mary E., Northboro
Arvidson, Mrs. Bette Lou, Boylston	Breen, Mrs. Jane C., Shrewsbury
Aulson, William N., Lynn	Brockelman, Philip S., Shrewsbury
*Averka, Jacqueline R., Auburn	*Broverman, Mrs. Inge N., Worcester
	Brown, Donald F. J., Wollaston
Baldyga, Edward S., W. Warren	*Brown, E. Thomas, Grafton
Bardsley, Kathleen M., Uxbridge	Brown, Edward V., Caldwell, N. J.
Barker, Mrs. Rose M., Worcester	*Brust, Ronald W., Worcester
Bartlett, Lawrence W., Worcester	Bryson, Carl J., New York, N. Y.
Beauregard, Raymond J., Worcester	Buckley, James T., Worcester
Berg, Carl H., Worcester	Bujnevici, John S., Gilbertville
Bergman, Robert K., Marlboro	Burdulis, Vincent J., Worcester
*Berman, Mrs. Davida E., Worcester	Burke, Raymond T., Worcester
Blundell, Barry A., Auburn	Bushman, Richard L., Newton Highlands
Bodurian, Edward, Worcester	
Bogigian, Robert A., Worcester	Cameron, Bernard J., Worcester
Bogoian, George, Worcester	Carapetian, Jean Y., Worcester
Boisvert, Joseph L., Millbury	Caron, Henri L., Fitchburg
Bonofiglio, Richard A., Worcester	Carpenter, Mary, Worcester

- Carter, Mrs. Lorna, Worcester
 *Cha, Chung Hwa, Seoul, Korea
 Chakonas, Paul C., Worcester
 Charlesworth, Donald W., Worcester
 Clark, Elizabeth A., Fitchburg
 Clark, Elsie B., Trumbull, Conn.
 Clemence, Gertrude M., Sterling Junction
 Clinedinst, Richard W., Worcester
 Cohen, Charlotte R., Worcester
 Cohen, Martin B., Worcester
 Collins, Mrs. Delores F., Worcester
 Collins, George M., Milton
 Coppentrath, Mrs. Alice P., Clinton
 Coupe, George A., Worcester
 Courtney, Richard J., Worcester
 Cox, John H., Hardwick, Vt.
 Cravedi, Robert A., Fitchburg
 Cree, Barbara, Southbridge
 Crowe, Elaine M., Worcester
 Culbert, John E., Worcester
- Dahlstrom, Lee D., Worcester
 Daly, John W., Gardner
 Dander, Emanuel, Groton, Conn.
 Davis, John M., Sterling Junction
 DeBoer, Sidney E., Clinton
 Delia, Herbert C., Malden
 DePaul, Mrs. Alice V., Worcester
 dePlata, Mrs. Katherine S., Bogota, Colombia
 D'Errico, Peter M., Worcester
 Dexter, Joan M., Harvard
 DiRenzo, Vincent N., Milford
 Donaldson, James R., Jr., Shrewsbury
 Dorey, Ralph P., Worcester
 Dowgiert, Paul R., Auburn
 Downes, George A., Jr., Worcester
 Duryee, Dolores, Worcester
- Eager, John F., Worcester
 *English, Paul W., Worcester
 Engstrom, Lincoln L., Auburn
- *Farnham, Frederic, Waban
 Feldt, Nancy A., Auburn
 Felton, Frederick L., Worcester
 Finneran, James H., Westboro
 *Fischer, Martin A., Brooklyn, N. Y.
 *Flemming, Marcia, S. Attleboro
 Flower, David A., Worcester
 Foley, Margery C., Worcester
 Forester, Paul W., Worcester
 Forzley, Philip, Worcester
 Foster, Elaine E., Worcester
 Fredette, Norman H., Fitchburg
 Freeman, Richard P., Worcester
 Fulgoni, John H., Worcester
- Galvin, Richard F., Worcester
 *Gardella, Lillian, Worcester
- Gauagan, Francine M., Worcester
 Gay, George H., Jr., Southboro
 Giantris, Louis M., Worcester
 Gilmore, Robert G., New Canaan, Conn.
 Goldman, Norman H., Worcester
 Goldstein, Alan D., Worcester
 Gordon, Melvin P., Worcester
 Gormley, Paul L., Jr., Dracut
 Goss, Robert W., Fitchburg
 Griffin, Carl R., Jr., Rutland
 Griffin, George R., Rutland
 Grigas, William A., Worcester
 Grossman, Lorraine, Worcester
 *Guerin, Henry J., Webster
 Guertin, Doris G., Worcester
 Gustafson, Richard L., Worcester
- Hacanis, Andrew J., Worcester
 Hagstrom, Conrad W., Millbury
 Hamilton, Mrs. Helen M., West Boylston
 Hammer, Judy L., Wellesley
 Hammond, Mrs. Emma G., Charlton Depot
 Haring, Mrs. Regina M., S. Lancaster
 *Harned, Robert V., Allentown, Pa.
 Harper, Roy L., Worcester
 Harriman, Edward R., Fitchburg
 Hartleb, Harvey, Jr., Bath, Me.
 Haskell, Leonard, Baker, Montana
 Hayden, Marilyn A., Methuen
 Herlihy, James J., Worcester
 *Hicks, Norman W., Fitchburg
 Higgins, Alma L., Peabody
 Hill, Norman R., East Hampton, Conn.
 Horvath, Joseph E., New Brunswick, N. J.
- Iacovone, Julio J., Worcester
 Isabelle, Roger J., Worcester
- Jacobson, M. Howard, Worcester
 Jaeger, Marianne T., Clinton
 Johnson, Carle A., Jr., Laconia, N. H.
 Johnson, David F., Worcester
 Johnson, Donald M., Worcester
 Johnson, Philip F., Worcester
 Johnson, Richard S., Jefferson
 Johnson, Robert A., Sutton
 Johnson, Robert E., Rutland
 Johnson, Wayne P., Montgomery, Ala.
 Jones, George C., Worcester
 Jordan, Winthrop D., Worcester
- Kane, Excina L., Millbury
 Kaplan, Alan G., Worcester
 *Katzeff, Richard A., Worcester
 Kelley, Justin J., Worcester
 *Killian, Dale V., Worcester
 Kimball, LoeAnne, Littleton Common
 Kiniry, Bruce J., Worcester
 Klein, Mrs. Charlotte Z., Worcester

- Klinger, Lawrence, New York, N. Y.
 Koch, Forrest E., House Springs, Mo.
 Konopka, Richard F., Worcester
 Kontaxopoulou, Despina P. S., Worcester
 Kopeck, Richard J., Winsted, Conn.
 *Krock, Barry, East Brookfield
 Kronberg, George H., Worcester
 Kronick, Barry L., North Adams
 Krus, Donald M., Worcester
 Kunawat, Rajnikorn, Worcester
 *Kusik, Mairi J., Richmond
- Lamont, Douglas F., Newark, N. J.
 Lancaster, M. Jane, New York, N. Y.
 Lang, Vera J., New York, N. Y.
 Langer, Bernhardt W., Jr., Webster
 Lanza, Carl F., Leominster
 *Lawrence, Ira S., Brooklyn, N. Y.
 Laws, John S., Worcester
 Leavitt, Mrs. Nancy, Worcester
 Leboeuf, Mrs. Janine A., Dudley
 Leonard, Earl W., Worcester
 Levison, Bruce E., Brookline
 Lewis, Nancy L., W. Hartford, Conn.
 Lindberg, Bruce A., West Boylston
 Lister, Victor H., Leominster
 Lovell, Kenneth R., Boylston
 Lyons, James F., Worcester
- MacConnell, Gary W., Worcester
 MacGregor, Everett D., Cherry Valley
 Magnusson, Alva E., Worcester
 Maguire, Richard C., Old Orchard Beach, Me.
 Mahoney, Philip, Framingham
 *Malmstead, Lilyan, Worcester
 Mamarchev, James D., Jr., Southboro
 *Marcus, Harold G., Worcester
 Margolis, Barnet N., Miami Beach, Fla.
 Marks, Milton S., Worcester
 *Marshall, Thomas S., Averill Park, N. Y.
 Maska, Henry A., Southbridge
 *Mason, Marcus M., Worcester
 Maxham, David, Worcester, Vt.
 Mays, Lois A., Worcester
 *McCarron, Paul J., Worcester
 McCarthy, Alfred V., Worcester
 McKay, Janel A., Holden
 McMurphy, Dorothy M., Pittsfield
 *Meagher, John H., Worcester
 Meltzer, Naomi B., Worcester
 Miller, James M., Jr., Worcester
 *Miller, Meta C., Lanesboro
 Miller, Susan P., Worcester
 Mitchell, John A., Worcester
 Moberg, David H., Worcester
 Montag, Barbara, Worcester
 Mooshagian, Madieros, Worcester
 Moran, Raymond K., Worcester
 Moreau, Claudette T., Pawtucket, R. I.
- Morelle, Loretta M., Shrewsbury
 Morgan, Anne S., Worcester
 *Morgan, Mary B., Worcester
 Morrison, Donald L., West Millbury
 Morrison, E. Gertrude, Beacon, N. Y.
 Morrison, Richard C., Worcester
 Morse, Myrtie R., Worcester
 *Mosman, Neil, Worcester
 Murphy, William F., Milford
 Myska, Frank B., Rutland
- Newton, Janet F., Worcester
 Nichols, John F., III, Worcester
 Nolin, Diane C., Worcester
 *Norman, Robert C., Millbury
 Norris, Carolyn T., Grafton
 *Nowers, Nancy M., Harding
- Oakes, Mrs. Nancy H., Holden
 Oertly, Frederick J., Norwalk, Conn.
 O'Halloran, Thomas J., Worcester
 O'Hara, J. Philip, Grafton
 Olson, Donald L., Worcester
 *Olson, Marjorie L., Worcester
 O'Neil, John J., Worcester
 *Oosterman, Gordon, Edgerton, Minn.
 *Oswell, David D., Worcester
- Pacek, Stanley E., Worcester
 *Paltrineri, Paul, Wellesley Hills
 Pascal, David, Woonsocket, R. I.
 Patzer, James D., Pekin, Illinois
 Pawlina, Frank E., Woonsocket, R. I.
 Pearson, Robert S., Worcester
 Peirce, David A., Worcester
 Petralias, Nicholas S., Worcester
 Petridis, Adrianne E., Hyannis
 Pilling, Jean M., Worcester
 Pitera, Barbara E., Slippery Rock, Pa.
 Porter, Mrs. Elia F., Charlton City
 Porter, Gerald D., Worcester
 *Posnik, Jay A., Springfield
 Potter, Spencer R., Leicester
 Potvin, Paul C., Shrewsbury
 Powers, James B., Worcester
 Price, Malcolm I., Clinton
 Proffitt, George H., Worcester
 Pulaski, Joan R., Worcester
- Ramirez, M. Edgardo, Worcester
 Raphaelson, Milton H., Worcester
 Reed, Ivan L., Clinton
 Rice, Richard S., Warren
 Robinson, Mrs. Sallie E.
 Rochette, Edward C., Worcester
 Rockwell, Dale L., Groton, Conn.
 Rogstad, Ronald H., Winchendon
 Romano, Albert J., Jr., Fitchburg
 *Rome, Maxine, Worcester

Rosenthal, Jane, Worcester
 Rothwell, Lawrence F., Worcester
 Rourke, John F., Millbury
 Rowe, Minott R., Worcester
 Ryan, Jane H., Webster

 St. Jean, Diane B., Auburn
 St. Onge, Remi L., Southbridge
 Saitas, James J., Putnam, Conn.
 Samia, Mrs. Sallie J., Worcester
 Saunders, James W., Webster
 *Savage, Ronald S., Worcester
 *Schulhoff, Celia L., Athol
 Sears, Leonard F., Worcester
 Seifer, Joan, Hudson
 Seligman, Fred, Rego Park, N. Y.
 *Shadbegian, Ronald W., Worcester
 Shamgochian, Alice, Worcester
 *Sheehan, Patrick, Worcester
 Sigalis, William C., Worcester
 Sinnery, Donald J., Worcester
 *Skelton, Frederick S., Winchendon
 Smalanskas, George J.
 Smith, Diane D., Bridgeport, Conn.
 Sondrol, Mrs. Helen E., Worcester
 Sperry, Herbert S., Gardiner, Maine
 Spurr, Arnold N., Southboro
 Stafford, Priscilla M., Webster
 Stannard, George E., Paxton
 *Stark, Claude A., New York, N. Y.
 Starzyk, Frederick H., Framingham
 Stavros, Mrs. Anna K., Worcester
 *Steele, Fredric L., Boxboro
 Steffon, Mary A., Grafton
 Steinberg, Lloyd B., Scarsdale, N. Y.
 *Streichler, Allan M., Brooklyn, N. Y.
 Sullivan, Helen T., Worcester
 Sullivan, Madelyn M., Providence, R. I.
 Sullivan, Robert J., Worcester
 Sullivan, William T., Braintree

Sutcliffe, June L., Auburn
 Swenson, Carl R., West Boylston

 Takeuchi, Nobuhiko, Worcester
 *Tasse, George P., Southbridge
 Taylor, Frederic F., Worcester
 Taylor, Mrs. Lorraine, Southbridge
 Teixeira, Leonard F., Hudson
 Thoren, Terees, Holden
 Tremblay, Donald N., Shrewsbury
 Tsourdes, Konstantine N., Worcester
 Tucker, Marvin E., Brookfield

 Undergraves, Hazelann, Southbridge

 vanLeeuwen, Philip C., Worcester
 Vinkemulder, Charles B., Worcester
 Viscardi, Frank R., Shrewsbury

 Waldron, Robert J., Rochdale
 Walent, Nellie, Nashua, N. H.
 Walker, Philip E., Worcester
 Ware, Philip D., Worcester
 Warner, John F., Jr., Clinton
 Waterhouse, Mrs. Jane W., Holden
 *Waxman, Norman, New York, N. Y.
 Weinberger, Leon J., Clinton
 Weiner, Robert S., Ossining, N. Y.
 West, Togo D., Winston-Salem, N. C.
 Westerback, Mrs. Sonya J., Worcester
 Wilcox, Sandra, Shrewsbury
 Wilson, Martin C., Bay Shore, N. Y.
 *Wondolowski, Anthony S., Worcester
 Wood, John H., Worcester
 Wood, Thomas A., West Boylston
 Wright, Robert L., Worcester
 Wu, Cheng-Tsu, New York, N. Y.

 Zack, Leonard, Southbridge
 Zeh, Mary J., Northboro

SUMMARY OF STUDENT ENROLLMENT FOR 1956-1957

Undergraduates

	Men	Women		
Freshmen	126	69		
Sophomores	127	55		
Juniors	127	48		
Seniors	122	36		
			Men	Women
Total Undergraduates			502	208
Graduate Students			138	44
Special Students			22	10
Evening College (enrolled in day college)			3	2
TOTALS — Men's College, Women's College and Graduate School			665	264
1956 Summer school			239	103
Total students			901	370
Less duplications			102	31
Net totals			802	336
Evening College*				
Fall term 1956			329	206
Spring term 1957			302	143

* Does not include those enrolled for non-credit courses.

Degrees Conferred

In the Calendar Year 1956

BACHELOR OF ARTS

Joan Engstrom Allard with Highest Honor in General Course	Anna Angela Kottis
William Cheney Allard	George Herbert Kronberg
Cecil Iris Allmon	Paul Taylor Lavigne
June Margaret Allstrom	Ralph Patterson Lincoln
Anthony Harry Almasian	Barbara Jane Lindblom
Thomas Julius Anton with High Honor in General Course and with Honors in History	Ruth Stoddard Long
Elaine Gertrude Bailey	Nicholas Augustus Longo with Honors in International Relations
Bruce Morgan Bardsley	Manuel Dennis Lopez
Anastasia Bassios	Gary MacConnell
Edwin Howe Bennett	Kenneth Magiday
Kenneth Gordon Bunker	George Robert Manna
Elinor Beth Caplan	David Vandlan Matthew
Arthur Wallace Carlson, Jr.	Gaynell Ruth McAuliffe with Honor in General Course
Shirley Marie Chavoort	Robert Allen McQuaid
Frederick Clifford Cohen	Paul Alan Melvin
Harris Irving Cohen	Rena Toby Mogil
Richard Paul Companion	Marilyn N. Morin
Sharon Blue Cronkite	Joseph Nathan
Myra Leah Croog	Carol Evelyn Norcross
Nobert Alvin Daigle	San Ok Paik with High Honor in General Course
Joseph John Dyer	Anne Demetrios Panagiotopoulos
Herbert Richard Ellison with Highest Honor in General Course and with Honors in Chemistry	Victoria Manos Petrides with Honor in General Course and with Honors in Chemistry
Lincoln Loring Engstrom	Elaine Pollinger
Raymond Leonard Farrow	Elaine Isabelle Primeau
Richard Henry Goss	William Charles Rauscher
Louis Hunter Greenwood	Robert Ernest Robes with Honor in General Course
William Anthony Grigas	Ryland Fuller Rogers
Linda Cohn Gurry with Honors in History	Marion Anne Rosenthal
Bruce Wallace Haims	Mary Anne Roulet
June Hartwell	David Alan Russell
John Bernard Herman, Jr.	Frederick James Samaha with High Honor in General Course
Barbara Ann Ware Holmes with Honor in General Course	Boris Sheleg
Charles Bennett Houghton	Irene I-chuan Shen with High Honor in General Course
Winifred Ray Hubbard with Honor in General Course	Gary Jay Sher
Neal Jay Hurwitz	Shirley Sally Singer
Stephen Isaacson	Harry William Smith, Jr.
Ann Marie Jackola	Marc Paul Smith
Sandra Paula Jennings	Ronald Fred Snyder
Janet Helen Jowise	Marlene Charlotte Sobel with High Honor in General Course and with Honors in Psychology
Marjorie Alice Kay	Albert Stern
*Valerie King	
Benjamin Zalman Klein	

* Degree awarded "as of" June 5, 1955.

Gerald Maxwell Still
 *Neil Joseph Sullivan
 Richard Gerald Thompson
 Shelby Walker Thompson
 Naomi Etta Trachtenberg
 Angelo John Traina
 Yaw Bamful Turkson

*William Ernest Warden
 Burton Stuart Weisman
 *Arnold Clare Weller, Jr.
 *Frank Samuel Williston
 Louise Mary Wylan
 Elizabeth Barbara Zamanigian

BACHELOR OF BUSINESS ADMINISTRATION

Philip Weston Atkinson
 Gediminas Mike Basiulis
 David Milton Bean
 Robert Stanley Bossman
 Robert Earl Brownlow
 Frank Stevenson Burton
 *Daniel Thomas Callahan
 Robert Irving Chase
 Daniel Dargie, Jr.
 Francis Bruce Dion
 John Richard DiVerdi
 Roy James Dodd
 Richard Allen Escolas
 Wesley Elbert Forte
 with High Honor in General Course and
 with Honors in Business Administration
 John Michael Griffin
 *Richard Knight Henderson
 *David Bergen Johnston
 John Joseph Kelly
 Ernest Mayer Lander
 with Honors in Business Administration

Robert Harvey Lander
 with Honors in Business Administration
 Lawrence Dominic Leone
 Bruce Albert Maxwell
 James Moniz
 with Honor in General Course and
 with Honors in Business Administration
 Raymond Bertram Multer
 Soltan Said Nazemi
 Donald Hillier Olson
 Louis Dominic Patracone
 David Shepardson Pond
 Wayne Whitmore Porter
 Arthur Joseph Remillard, Jr.
 Frederick Lawrence Rhodes, Jr.
 Ronald Steven St. Jean
 Saul Leonard Thomasow
 William John Waddleton
 Edward Dearborn Whittier
 Roger Irving Williams
 Monte Earl Yaffe
 Dominic Zani, Jr.

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Albert Joseph Bouffard
 Joseph Robert Eid

John Francis Kilcoyne
 Paul Rossman

BACHELOR OF SCIENCE IN GENERAL STUDIES

Tamara Dagmar Lasberg

MASTER OF ARTS

Vernon Ahmadjian
 Ali Mohammed Al-Mayah
 Margery Bodansky
 Eugene Sheu Theung Chin
 Pearl Mildred Corea
 Raquel Maria de Leon P.
 Aubrey Diem
 Marguerite Prentice Ford
 John Louis George
 Robert Samuel Liebert
 Telesforo Wisco Luna, Jr.
 James Walter Mader, Jr.
 Audrey Jane Mishler

Michael James Murphy
 John Richard Pavia, Jr.
 John William Pawling
 Preduman Krishen Raina
 Arnold Herbert Raphaelson
 William John Salem
 Saul Murray Schanberg
 Charles Anthony Shamoian
 Shih-Ping Shen
 David Jay Simmons
 Sybil Dorothy Speier
 Ralph Sternberg
 James Warren Wightman

* Degree awarded "as of" June 5, 1955.

MASTER OF ARTS IN EDUCATION

Forrest Andrews
Barry Argento
Eugene Charles Christoph
Libro Ciani
Carolyn Janet Clark
Raymond William Colby
Robert Harold Consolmagno
John Joseph Dwyer
Thomas Francis Gilmartin
Victor William Haggar
Clifton Henry Hulbert
Robert Henry Hutchinson
James Malcolm Kemp

Donald Richard LaBrie
Edgar Dana Lord
Donald Thomas Nicholson
Winifred Jarvis Savulis
Arnold Robert Shaw
Kanda Sindhvananda
Harold Dwight Smith, Jr.
Anna Howe Stead
Robert Edward Todd
Bernard Henry Tremblay
Carol Wilson
John Arden Woodall
Ruth Grosvenor Woodis

DOCTOR OF PHILOSOPHY

Deane Chalmers Carson
Peter Elia Comalli, Jr.
Bart Jacob Epstein
Robert Granville Harlow
George Marvel Howe
Clara Rom Lougee
Vsevolod Mihajlov
Thomas Basil Mulholland, Jr.
Bruce Crossan Ogilvie

William Adolphus Osborne
Guy Norris Parmenter
Arnet Lauriston Powell
Lillian Gottesman Raeff
Bernard Philip Rosenblatt
Benjamin Shwadran
Kripa Nath Varma
Walter Henry Zukowski

HONORARY DEGREES

Edwin Garrigues Boring
Henry Chase Marble
Harold Manton Smith
Lester Bowles Pearson

Doctor of Science
Doctor of Science
Doctor of Science
Doctor of Letters

SUMMARY OF DEGREES GRANTED IN 1956

DEGREES IN COURSE

BACHELOR OF ARTS	95
BACHELOR OF BUSINESS ADMINISTRATION	38
BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION (EVENING COLLEGE)	4
BACHELOR OF SCIENCE IN GENERAL STUDIES (EVENING COLL.)	1
MASTER OF ARTS	26
MASTER OF ARTS IN EDUCATION	26
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HONORARY DEGREES

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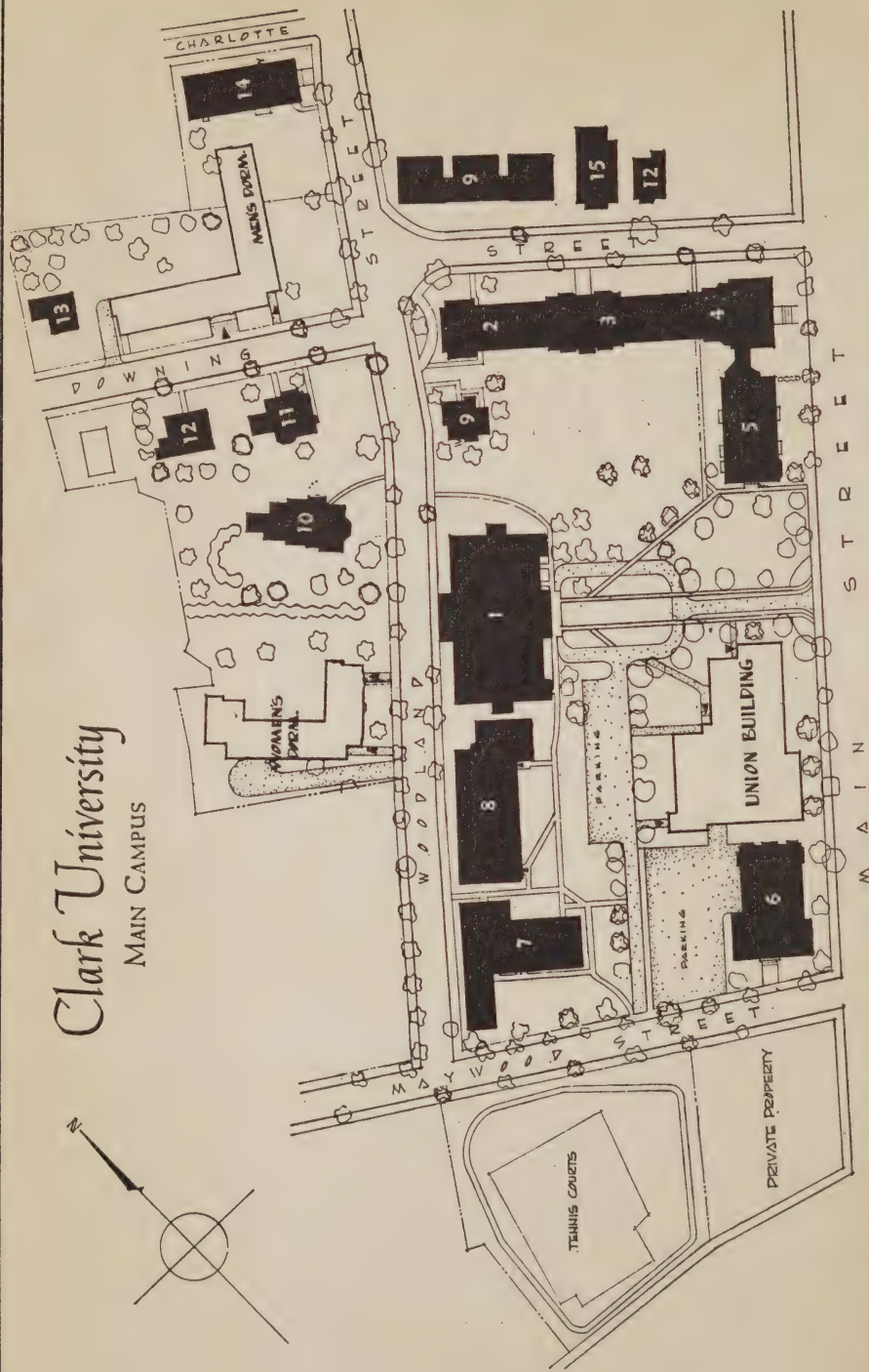
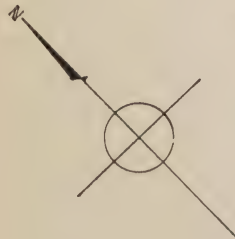
GENERAL CATALOG

for the academic year 1958-59

No. 233

Clark University

MAIN CAMPUS



1. Jonas Clark Hall
2. Alwood Hall
3. Library Tower

5. Geography School
6. Summit Gymnasium
7. Chemistry Building

9. Women's Dormitories
10. President's Home

13. Student Union
14. Estabrook Hall

- Under Construction
- Men's Dormitory

Clark University

BULLETIN



GENERAL CATALOG

for the academic year 1958-59

No. 233

September, 1958

The Clark University Bulletin is published in January, February, August, September and October. Second-class mail privileges authorized at Worcester, Massachusetts. Correspondence may be addressed to: Clark University, 950 Main Street, Worcester 10, Massachusetts.

A record for the academic year 1957-58.
Such announcements for the year 1958-59 as
can be made at the time of publication are
included.

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The Academic Calendar

The academic year begins on the Monday before the fourth Thursday in September and ends on Saturday before the thirty-eighth Monday. It includes two approximately equal semesters and three vacation periods: two weeks including Christmas and New Year's Days; one week at the close of the mid-year examination period, and one week near the first of April.

The first semester ends on the Saturday before the twentieth Monday. The second semester begins on the twentieth Monday of the academic year.

1958

First Semester 1958-59

September 22	Monday	— Registration day. Beginning of academic year 1958-59.
October 12	Sunday	— Columbus Day. Monday, not a holiday.
November 3	Monday	— Last day for receiving applications for admission to candidacy for the degree of Doctor of Philosophy in June 1959.
November 11	Tuesday	— Veterans' Day. Not a holiday.
November 17	Monday	— Mid-semester reports due at 9 a.m.
November 26	Wednesday	— Beginning of Thanksgiving recess at close of classes.
December 1	Monday	— End of Thanksgiving recess at 8 a.m.
December 19	Friday	— Beginning of Christmas recess at close of classes.

1959

January 5	Monday	— End of Christmas recess at 8 a.m.
January 10	Saturday	— Registration day for second semester.
January 15	Thursday	— Classes omitted.
January 16	Friday	— Beginning of semester examination period.
January 27	Tuesday	— Beginning of mid-year recess.

Second Semester 1958-59

February 3	Tuesday	— End of mid-year recess at 8 a.m. Beginning of second semester.
February 6	Friday	— Last day for receiving applications for admission to candidacy for the degrees of Master of Arts and Master of Arts in Education in June 1959.
March 23	Monday	— Mid-semester reports due at 9 a.m.
March 27	Friday	— Beginning of spring recess at close of classes.
April 6	Monday	— End of spring recess at 8 a.m.
May 11	Monday	— Dissertations for the degree of Doctor of Philosophy due at Registrar's office at 9 a.m.
May 18	Monday	— Theses for degrees of Master of Arts and Master of Arts in Education due at Registrar's office at 9 a.m.
May 20	Wednesday	— Classes omitted.
May 21	Thursday	— Beginning of semester examination period.
May 30	Saturday	— Memorial Day. A holiday.
June 7	Sunday	— Commencement.

Board of Trustees

FRANCIS H. DEWEY, JR. (1934)	Worcester, Mass.
ROBERT H. LOOMIS (1936), Chairman	West Newton, Mass.
FRANK L. ADAMS (1938)	Fort Lauderdale, Fla.
HOWARD M. BOOTH (1939)	Worcester, Mass.
SAMUEL H. DOLBEAR (1940)	New York, N. Y.
RAYMOND T. GIFFORD (1947), Treasurer	Worcester, Mass.
JOHN JEPSON (1948)	Worcester, Mass.
HARRY C. COLEY (1948)	Worcester, Mass.
ROLAND A. ERICKSON (1951)	Worcester, Mass.
JOSEPH C. MOLDER (1954), Secretary	Worcester, Mass.
JACOB HIATT (1955)	Worcester, Mass.
RICHARD W. MIRICK (1957)	Worcester, Mass.

ELECTED TO REPRESENT THE ALUMNI (Four Year Term)

MAXWELL B. SEDER (1954-1958)	Worcester, Mass.
CLIFFORD O. GRIFFITH (1955)	Worcester, Mass.
SAMUEL FLAGG BEMIS (1956)	New Haven, Conn.
EDWARD B. PECK (1957)	Elizabeth, N. J.
ALANSON W. PARKES (1958)	Boonton, N. J.

Academic Administration

HOWARD B. JEFFERSON, President
TILTON M. BARRON, Librarian
HENRY C. BORGER, JR., Dean of Men
LYDIA P. COLBY, Registrar
THOMAS J. DOLPHIN, Director of the Evening College
M. HAZEL HUGHES, Dean of Women
ROBERT M. HYDE, Vice President
H. DONALDSON JORDAN, Chairman of the College Board
DWIGHT E. LEE, Secretary of the Graduate Board
GEORGE H. MERRIAM, Director of Admissions
ROGER C. VAN TASSEL, Director of the Summer School

Faculty

(President; Emeriti, alphabetically; Faculty and Officers of Instruction, alphabetically)

HOWARD BONAR JEFFERSON, PH.D., LL.D., L.H.D., President. A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D., Denison University, 1948, Hillsdale College, 1952, Northwestern University, 1958; L.H.D., Colgate University, 1951, Assumption College, 1956. (1946-)

EMERITI

LEROY ALLSTON AMES, M.A., Professor of English Literature, Emeritus. (1908-1944)

SAMUEL J. BRANDENBURG, PH.D., Professor of Economics and Sociology, Emeritus. (1923-1950)

LORING HOLMES DODD, PH.D., L.H.D., Professor of English and Art, Emeritus. (1910-1949)

ROBERT STANLEY ILLINGWORTH, M.A., ED.M., Professor of Speech and Drama, Emeritus. (1931-1958)

HOMER PAYSON LITTLE, PH.D., LL.D., Dean of the College and Professor of Geology, Emeritus. (1922-1954)

CAREY EYSTER MELVILLE, A.B., Professor of Mathematics, Emeritus. (1909-1948)

BENJAMIN SHORES MERIGOLD, PH.D., SC.D., Professor of Chemistry, Emeritus. (1903-1946)

FACULTY AND OFFICERS OF INSTRUCTION

FESTUS G. AMSDEN, A.B., Assistant Director of Physical Education for Men. A.B., Clark University, 1951. (1954-)

†KARL OSCAR EMANUEL ANDERSON, PH.D., Associate Professor of English. A.B., Harvard University, 1927; M.A., 1928; Ph.D., 1942. (1945-)

† Absent on leave, first semester, 1958-59.

- ROBERT L. ANSTEY, PH.D., Visiting Lecturer in Geography. B.A., University of Nebraska, 1947; M.A., 1947; Ph.D., University of Maryland, 1957. (1957-58)
- *KARL J. ARNDT, PH.D., Professor of German. M.A., Washington University, 1928; Ph.D., The Johns Hopkins University, 1933. (1950-)
- ROBERT WILLIAM BAKER, PH.D., Associate Professor (Affiliate) of Psychology. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)
- GEORGE ANTHONY BALKO, JR., M.B.A., Assistant Professor of Business Administration. M.E., Stevens Institute of Technology, 1947; M.B.A., New York University, 1952. (1956-)
- *RAYMOND EDMOND BARBERA, PH.D., Assistant Professor of Romance Languages. A.B., Brooklyn College, 1947; M.A., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)
- CLAUDE WILLIS BARLOW, PH.D., Associate Professor of Classics. A.B., Amherst College, 1928; M.A., Indiana University, 1930; Ph.D., Yale University, 1935. (1947-)
- TILTON MARSHALL BARRON, B.L.S., Librarian. A.B., Colorado College, 1937; B.L.S., Columbia University School of Library Service, 1940. (1954-)
- ‡JAMES FRANKLIN BEARD, JR., PH.D., Associate Professor of English. A.B., Columbia College, 1940; M.A., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)
- ROBERT NELSON BECK, PH.D., Associate Professor of Philosophy. A.B., Clark University, 1947; M.A., Boston University, 1948; Ph.D., 1950. (1948-)
- ROGER MAURICE ALBERT BIBACE, PH.D., Lecturer in Psychology. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)
- HENRY CHARLES BORGER, JR., PH.D., Associate Professor of Education and Dean of Men. A.B., Princeton University, 1933; M.A., Columbia University, 1938; Ph.D., 1954. (1950-)

* Absent on leave, 1957-58.

‡ Absent on leave, 1958-59.

- CARL OSCAR BORRNER, JR., A.B., Instructor in Public Speaking. A.B., Wesleyan University, 1953. (1957-)
- CHELCE C. BOSLAND, PH.D., Visiting Lecturer in Economics. B.S., University of Minnesota, 1923; M.A., 1924; Ph.D., University of Michigan, 1929. (First semester, 1957-58)
- PHILIP HUBERT BREEN, LL.B., Lecturer in Business Law. A.B., College of the Holy Cross, 1920; LL.B., Boston University, 1923. (1947-)
- JOHN F. BROTHWELL, A.B., Visiting Lecturer in Economics. A.B., University of Nottingham, 1949. (Second semester, 1957-58)
- JESSE LUNT BULLOCK, PH.D., Professor of Chemistry and Director of the Chemical Laboratories. A.B., Harvard University, 1914; M.A., 1928; Ph.D., 1932. (1926-)
- CHARLES THEODORE BUMER, PH.D., Professor of Mathematics. B.Sc., Denison University, 1919; M.A., Harvard University, 1922; Ph.D., Ohio State University, 1931. (1948-)
- GUY HARVEY BURNHAM, M.A., Instructor in Geography and Cartographer, Graduate School of Geography. A.B., Clark University, 1916; M.A., 1922. (1922-)
- GEORGE CAMOUGIS, PH.D., Assistant Professor of Biology. B.S., Tufts College, 1952; A.M., Harvard University, 1957; Ph.D., 1958. (1958-)
- HANS CAROL, PH.D., Visiting Professor of Geography. Ph.D., University of Zürich, 1945. (1958-)
- WILLIAM HOYT CARTER, JR., PH.D., Associate Professor of English. A.B., Middlebury College, 1936; M.A., Harvard University, 1938; Ph.D., 1951. (1949-)
- GEOFFREY CLIVE, PH.D., Assistant Professor of Philosophy. B.A., Colgate University, 1948; M.A., Harvard University, 1950; Ph.D., 1953. (1957-)
- JAMES MADISON COFFEE, ED.D., Associate Professor of Education and Director of Placement. A.B., Duke University, 1949; M.A., Cornell University, 1950; Ed.D., Harvard University, 1957. (1954-)

- MORRIS HAROLD COHEN, PH.D., Associate Professor of Government. A.B., University of Chicago, 1939; Ph.D., 1950. (1947-)
- LYDIA PERRY COLBY, Registrar. (1932-)
- PETER ELIA COMALLI, JR., PH.D., Assistant Professor (Affiliate) of Psychology. A.B., Clark University, 1949; M.A., 1951; Ph.D., 1956. (1958-)
- SAMUEL PENDLETON COWARDIN, III, M.A., Assistant Professor of Fine Arts. A.B., Harvard University, 1943; M.A., 1948. (1949-)
- WALTER HOBSON CROCKETT, PH.D., Associate Professor of Psychology. A.B., University of Kansas, 1947; M.A., 1949; Ph.D., University of Michigan, 1953. (1957-)
- JESSIE CAMPBELL CUNNINGHAM, A.M., Instructor in English. Ph.B., University of Chicago, 1948; A.M., 1952. (1957-)
- JOHN DAVID DANIELSON, A.M., Instructor in Romance Languages. A.B., Northern Michigan College, 1949; A.M., University of Michigan, 1950. (1957-)
- TAMARA DEMBO, PH.D., Associate Professor of Psychology. Ph.D., University of Berlin, 1930. (1953-)
- ANDREW DIBNER, PH.D., Assistant Professor (Affiliate) of Psychology. A.B., Brooklyn College, 1948; M.A., University of Michigan, 1949; Ph.D., 1953. (1956-58)
- THOMAS JOSEPH DOLPHIN, A.B., Director of the Evening College. A.B., Rutgers University, 1951. (1957-)
- RALPH I. DORFMAN, PH.D., Professor (Affiliate) of Chemistry. B.S., University of Illinois, 1932; Ph.D., University of Chicago, 1934. (1955-)
- JAMES STANHOPE EDWARDS, M.A., Associate Professor of German. A.B., Brown University, 1936; M.A., 1938. (1947-)
- ROBERT C. ESTALL, M.A., Visiting Lecturer in Geography. M.A., London School of Economics and Political Science. (Second semester, 1958)

BURTON N. GATES, PH.D., Research Associate in Biology. A.B., Clark University, 1905; A.M., 1906; Ph.D., 1909. (1954-)

HAROLD GOODGLASS, PH.D., Lecturer in Psychology. B.A., College of the City of New York, 1939; M.A., New York University, 1948; Ph.D., University of Cincinnati, 1951. (1956-)

*DANIEL GORENSTEIN, PH.D., Associate Professor of Mathematics. A.B., Harvard University, 1943; Ph.D., 1950. (1951-)

ROCHELEAU Z. GRANGER, JR., M.A. IN ED., Director of Physical Education for Men. A.B., Clark University, 1938; M.A., in Ed., 1939. (1949-)

SANTE GRAZIANI, M.F.A., Associate Professor (Affiliate) of Fine Arts. B.F.A., Yale University, 1942; M.F.A., 1948. (1958-)

GERALD N. GROB, PH.D., Instructor in American History. B.S., City College of New York, 1951; A.M., Columbia University, 1952; Ph.D., Northwestern University, 1958. (1957-)

ROY CHALMERS GUNTER, PH.D., Associate Professor of Physics. B.S., Bowdoin College, 1938; M.A., Boston University, 1939; Ph.D., 1942. (1941-)

†GORDON T. GWINN, PH.D., Associate Professor of Psychology. A.B., University of Arizona, 1942; Ph.D., Yale University, 1948. (1949-)

HERBERT HABER, M.A., Visiting Instructor in English. A.B., Brooklyn College, 1954; M.A., University of Chicago, 1955. (1958-)

GEORGE EDWARD HARGEST, M.B.A., Associate Professor of Economics and Business Administration and Acting Director of the Division of Business Administration. B.S., Temple University, 1933; M.Ed., 1937; M.B.A., Boston University, 1947. (1942-)

M. EVELYN HARRIMAN, M.A. IN ED., Lecturer in Education. B.S. in Ed., Boston University, 1948; M.A. in Ed., 1950. (1956-)

EDWARD HAROLD HASTINGS, A.M., Instructor in English. A.B., Wesleyan University, 1946; A.M., Harvard University, 1947. (1958-)

* Absent on leave, 1957-58.

† Absent on leave, first semester, 1958-59.

SEYMOUR HAYDEN, A.M., Assistant Professor of Mathematics. A.B., University of Wisconsin, 1947; A.M., Harvard University, 1948. (1957-)

SHERMAN STRONG HAYDEN, PH.D., Professor of International Relations. A.B., Harvard University, 1930; LL.B., 1933; M.A., Columbia University, 1936; Ph.D., 1942. (1946-)

FRANK D. HIRSCHBACH, PH.D., Assistant Professor of German. B.A., New Haven State Teachers College, 1946; M.A., Yale University, 1949; Ph.D., 1952. (1957-58)

M. HAZEL HUGHES, M.Ed., Dean of Women and Director of Physical Education for Women. B.Ed., Clark University, 1944; M.Ed., Boston University, 1949. (1942-)

ROBERT MOOERS HYDE, A.M., Vice President. A.B., Rutgers University, 1947; A.M., University of Pennsylvania, 1949. (1954-)

FRANK M. INSERNI, DOCTOR EN FILOSOFIA Y LETRAS, Assistant Professor of Romance Languages. B.A.E., University of Puerto Rico, 1941; A.M., Morehead College, 1942; Doctor en Filosofia y Letras, Universidad Central de Madrid, 1955. (1957-58)

VERNON JONES, PH.D., Professor of Educational Psychology. A.B. and M.A., University of Virginia, 1920; M.A., Columbia University, 1924; Ph.D., 1926. (1926-)

HENRY DONALDSON JORDAN, PH.D., Professor of English History and Chairman of the College Board. A.B., Harvard University, 1918; M.A., 1922; Ph.D., 1925. (1931-)

BERNARD KAPLAN, PH.D., Associate Professor of Psychology. A.B., Brooklyn College, 1948; M.A., Clark University, 1950; Ph.D., 1953. (1955-)

GERSON KEGELES, PH.D., Professor of Chemistry. B.S., Yale University, 1937; Ph.D., 1950. (1951-)

FREDERICK W. KILLIAN, LL.B., Associate Professor of Sociology. LL.B., New York University, 1925; A.B., 1934. (1947-)

‡JESSE FANNIN KING, M.A., Associate Professor of Romance Languages. A.B., Pomona College, 1936; M.A., Harvard University, 1937. (1946-)

‡ Absent on leave, 1958-59.

- WERNER KOELLA, M.D., Lecturer in Psychology. M.D., University of Zürich, 1942. (Second semester, 1957-58)
- DONALD M. KRUS, PH.D., Assistant Professor (Affiliate) of Psychology. B.A., Drew University, 1949; M.A., Clark University, 1951; Ph.D., 1957. (1958-)
- DWIGHT ERWIN LEE, PH.D., Professor of Modern European History and Secretary of the Graduate Board. A.B., University of Rochester, 1921; M.A., 1922; Ph.D., Harvard University, 1928. (1927-)
- DONALD HENRY LETENDRE, M.A. IN ED., Assistant Professor of English. A.B., Clark University, 1938; M.A. in Ed., 1939. (1946-)
- PAUL HERBERT LEVENSON, M.B.A., Assistant Professor of Business Administration. B.B.A., University of Massachusetts, 1955; M.B.A., University of Pennsylvania, 1957. (1957-)
- THEODORE LEVENTHAL, PH.D., Assistant Professor (Affiliate) of Psychology. B.A., Brooklyn College, 1948; Ph.D., University of Kansas, 1953. (1955-)
- ROBERT EARLE LINGNER, M.A., Instructor in Geology. A.B., Clark University, 1954; M.A., University of Maine, 1956. (1956-)
- HERBERT LIPTON, PH.D., Lecturer in Psychology. B.A., Rutgers University, 1949; M.A., Clark University, 1951; Ph.D., 1954. (1956-)
- ROLF LOOSLI, Assistant Professor of Physiology. Certificate for College Teaching in Biology, University of Zürich, 1953. (1956-1958)
- RICHARD JEWETT LOUGEE, PH.D., Professor of Geomorphology. B.S., Dartmouth College, 1927; M.A., University of Michigan, 1929; Ph.D., Columbia University, 1938. (1947-)
- ARTHUR EARL MARTELL, PH.D., Professor of Chemistry. B.S., Worcester Polytechnic Institute, 1938; Ph.D., New York University, 1941. (1942-)
- JAMES ACKLEY MAXWELL, PH.D., Professor of Economics. A.B., Dalhousie University, 1921; M.A., Harvard University, 1923; Ph.D., 1927. (1924-)

- FREDERICK EUGENE MELDER, PH.D., Professor of Economics. B.B.A., University of Washington, 1926; M.A., 1931; Ph.D., University of Wisconsin, 1936. (1937-1946; 1950-)
- GEORGE H. MERRIAM, A.M., Director of Admissions. A.B., Clark University, 1944; A.M., Brown University, 1947. (1952-)
- DAVID H. MILLER, PH.D., Visiting Lecturer in Geography. A.B., University of California (Los Angeles), 1939; M.A., 1944; Ph.D., University of California (Berkeley), 1953. (1957-58)
- *RAYMOND EDWARD MURPHY, PH.D., Professor of Economic Geography. B.S., Missouri School of Mines and Metallurgy, 1923; M.S., University of Wisconsin, 1926; Ph.D., 1930. (1946-)
- PAUL M. NASH, M.Ed., Assistant Professor of Education. B.S. (Econ.), University of London, 1949; M.Ed., University of Toronto, 1955. (1957-)
- WILLIAM R. NES, PH.D., Associate Professor of Biochemistry. Ph.D., University of Virginia, 1949. (1958-)
- HOWARD WHITE NICHOLSON, PH.D., Associate Professor of Economics. B.A., Oberlin College, 1942; M.A., Harvard University, 1948; Ph.D., 1953. (1958-)
- THEODORE NICOL, PH.D., Associate Professor of Romance Languages. A.B., Clark University, 1926; M.A., Harvard University, 1928; Ph.D., 1933. (1946-)
- †RUDOLPH FINK NUNNEMACHER, PH.D., Professor of Biology. B.S., Kenyon College, 1934; M.A., Harvard University, 1935; Ph.D., 1938. (1939-)
- NICHOLAS LEWIS ONORATO, M.A., Visiting Lecturer in Business Administration. B.S., Boston University, 1951; M.A., Clark University, 1952. (1957-)
- LESLIE PHILLIPS, PH.D., Professor (Affiliate) in Clinical Psychology. M.A., University of Chicago, 1944; Ph.D., 1949. (1946-)
- DAVID POTTER, PH.D., Professor of Biology. B.Sc., Massachusetts Agricultural College, 1916; M.Sc., 1923; Ph.D., Harvard University, 1932. (1924-)

* Absent on leave, second semester, 1957-58.

† Absent on leave, first semester, 1957-58.

- *LILLIAN RAEFF, PH.D., Lecturer in Psychology. B.S., College of the City of New York, 1950; M.A., Clark University, 1951; Ph.D., 1956. (1956-)
- *MARC RAEFF, PH.D., Associate Professor of Russian History. M.A., Harvard University, 1947; Ph.D., 1950. (1949-)
- RELLY RAFFMAN, M.A., Assistant Professor of Music. A.B., Dartmouth College, 1943; M.A., Columbia University Teachers College, 1949. (1954-)
- ERWIN RAISZ, PH.D., Visiting Lecturer in Geography. Diploma, Royal Polytechnicum, Budapest, 1914; M.A., 1924; Ph.D., Columbia University, 1929. (1947-)
- J. RICHARD REID, PH.D., Professor of Romance Languages. A.B., Swarthmore College, 1935; M.A., Harvard University, 1936; Ph.D., 1943. (1944-)
- JOHN T. REYNOLDS, M.S., Assistant Professor of Biology. B.S., Boston College, 1951; M.S., University of Massachusetts, 1954. (1956-)
- PERCY MARTIN ROOPE, PH.D., Professor of Physics. A.B., Clark University, 1920; M.A., 1924; Ph.D., 1927. (1921-)
- ERIC SELLIN, M.A., Instructor in Romance Languages. B.A., University of Pennsylvania, 1955; M.A., 1958. (1958-)
- JAMES GAIL SHELDON, PH.D., Visiting Lecturer in Sociology. B.A., Linfield College, 1937; M.A., Stanford University, 1939; M.A., Harvard University, 1944; B.D., Union Theological Seminary, 1954; Ph.D., Indiana University, 1954. (First semester, 1957-58)
- BORIS SHELEG, M.A., Research Associate in Physics. A.B., Clark University, 1956; M.A., 1958. (1957-)
- DAYTON D. SHEPHERD, M.A., Lecturer in Education. B.S., Southwest Missouri State College, 1946; M.A., Yale University, 1950. (1954-)
- JOHN SUNAPEE STUBBE, PH.D., Associate Professor of Mathematics. B.S., University of New Hampshire, 1941; M.S., Brown University, 1942; Ph.D., University of Cincinnati, 1945. (1949-)

* Absent on leave, 1957-58.

- THOMAS TAMOTSU SUGIHARA, PH.D., Associate Professor of Chemistry. A.B., Kalamazoo College, 1945; S.M., University of Chicago, 1951; Ph.D., 1952. (1953-)
- EDWARD N. TRACHTENBERG, PH.D., Assistant Professor of Chemistry. A.B., New York University; A.M., Harvard University, 1951; Ph.D., 1953. (1958-)
- FRANK UNGAR, PH.D., Visiting Assistant Professor of Chemistry. A.B., Ohio State University, 1943; M.S., Western Reserve University, 1948; Ph.D., Tufts University, 1952. (1956-1958)
- ROGER C. VAN TASSEL, PH.D., Associate Professor of Economics and Director of the Summer School. A.B., Union College, 1947; M.A., Cornell University, 1950; Ph.D., Brown University, 1956. (1954-)
- *SAMUEL VAN VALKENBURG, PH.D., Professor of Geography and Director of the Graduate School of Geography. Ph.D., University of Zürich, 1918. (1926-1929; 1932-)
- ANTHONY VARJABEDIAN, M.D., Lecturer in Psychology. A.B., Clark University, 1941; M.D., Yale University, 1944. (1954-)
- HORST VEY, DR.PHIL., Lecturer in History of Art. Dr.Phil., University of Köln, 1955. (1956-1958)
- SEYMOUR WAPNER, PH.D., Professor of Psychology. A.B., New York University, 1939; M.A., University of Michigan, 1940; Ph.D., 1943. (1948-)
- HENRY JOHN WARMAN, PH.D., Professor of Geography. B.S. in Ed., Bloomsburg, Pennsylvania, State Teachers College, 1932; Ed.M., Temple University, 1938; Ph.D., Clark University, 1945. (1943-)
- NEAL THOMAS WATSON, A.M., Assistant Professor of Mathematics. B.A., Duke University, 1943; A.M., Harvard University, 1948. (1957-58)
- JOSEPH WEINREB, M.D., Professor (Affiliate) of Psychology. A.B., Vanderbilt University, 1931; M.D., 1935. (1947-)
- HEINZ WERNER, PH.D., Professor of Psychology and G. Stanley Hall Professor of Genetic Psychology. Ph.D., University of Vienna, 1915. (1947-)

* Absent on leave, first semester, 1957-58.

MORTON WEINER, PH.D., Associate Professor of Psychology and Director of Clinical Psychology Training Program. B.S., College of the City of New York, 1949; M.S., 1950; Ph.D., University of Rochester, 1953. (1957-)

ALVIN WINDER, PH.D., Assistant Professor (Affiliate) of Psychology. B.A., Brooklyn College, 1947; M.S., University of Illinois, 1948; Ph.D., University of Chicago, 1952. (1956-1958)

JOSEPH FRANCIS ZIMMERMAN, D.S.S., Visiting Lecturer in Government. B.A., University of New Hampshire, 1951; D.S.S., 1954. (Second semester, 1957-58)

Teaching Assistants

FRANK E. CLARKSON, Psychology. B.A., Middlebury College, 1955; M.A., Clark University, 1957.

JOHN D. COUPE, Economics. B.S., Worcester Polytechnic Institute, 1953; M.A., Clark University, 1957.

ALEXANDER GASSAWAY, Geography. B.A., University of Virginia, 1950; M.A., George Washington University, 1956.

JON GLASCOW, Geography. B.A., Miami University (Oxford, Ohio), 1956.

HAROLD M. GOLDSTEIN, Sociology. B.A., Northeastern University, 1953; M.A., Boston College, 1957.

ROBERT P. HESS, International Relations. B.A., Lafayette College, 1955.

TOSHIO IRITANI, Psychology. B.A., Tokyo University, 1955; M.A., 1957.

LUCY KASPARIAN, Mathematics. B.S. in Ed., Salem State Teachers College, 1957.

GEORGE KRONBERG, Chemistry. B.A., Clark University, 1957.

JOHN M. MATUSZEK, Chemistry. B.S., Worcester Polytechnic Institute, 1957.

HENRY A. MAURAS, Mathematics. B.A., St. Anselm's College, 1955; M.A., Clark University, 1958.

JOSEPH H. MCFARLAND, Psychology. B.A., Brandeis University, 1955; M.A., Clark University, 1957.

PAUL MIKA, Geography. B.A., University of Pittsburgh, 1954; M.A., George Washington University, 1957.

JAMES MONIZ, Economics. B.B.A., Clark University, 1956; M.A., 1958.

GEORGE E. MONT, Chemistry. B.S., Brown University, 1957.

RICHARD PRESTON, Geography. B.A. in Ed., Central Washington College of Education, 1955; M.A., University of Washington, 1957.

LEROY W. RAND, History. B.S. in Ed., Gorham State Teachers College, 1956; M.A., Clark University, 1957.

HENRY E. ROSENBERG, Chemistry. B.A., Clark University, 1955; M.A., 1957.

HARRY G. SCHALCK, History. B.A., Ursinus College, 1949; M.A., Clark University, 1951.

TAKESHI UTSUNOMIYA, Chemistry. B.A., Clark University, 1957.

Appointments from Graduate Funds

JOHN A. DOON, History. B.A., College of the Holy Cross, 1957.

RICHARD ELLEFSEN, Geography. B.A., San Jose State College, 1955; M.A., Clark University, 1958.

JOSEPH GLICK, Psychology. B.A., Brandeis University, 1956.

DEITRICH HEINERT, Chemistry. B.A., Humboldt University (Berlin), 1952; M.A. (Diplom-Vorexamen), Universitaet Berlin, Germany, 1955.

MARGERY RUTH JOHNSON, History. B.A., Middlebury College, 1949; M.A., Clark University, 1951.

GEORGE K. KARDOUCHE, Economics. B.S., London School of Economics, 1957.

STANLEY D. KLEIN, Psychology. B.A., Lehigh University, 1957.

WILLIAM A. KOELSCH, Geography. B.S. in Ed., Bucknell University, 1955.

SONOKO OHWAKI, Psychology. A.B., Miyagi Women's College, 1948; M.A., Yohoku University, 1951.

PATRICIA R. POWER, Economics. B.A., Clark University, 1957.

ABDUL QADIR, Economics. B.A., Delhi University, 1949; M.A., Karachi University, 1953.

ARNOLD RAPHAELSON, Economics. B.A., Brown University, 1950; M.S., Columbia University, 1951.

DAVID M. ROTH, History. B.A., Brooklyn College, 1957; M.A., Clark University, 1958.

BARBARA SAYDAM, Geography. B.A., Denver University, 1948.

JOHN F. WALSH, Psychology. B.S., Fordham University, 1957.

Administration

IRMA M. BROWN, Secretary to the President

JOHN A. BURGESS, Editor of the News Bureau

RICHARD J. COURTNEY, Manager of the Bookstore

GLADYS DILIBERTO, Secretary to the Dean of Men and to the Chairman of the Graduate Board

JOSEPH GERMAIN, Superintendent of Buildings and Grounds

RAYMOND T. GIFFORD, Treasurer

MARY A. HUBBARD, Bursar

ANNA C. MCATEE, Nurse in charge of Infirmary

DAVID L. MURPHY, Assistant to the President

PATRICK V. SHEEHAN, Assistant Treasurer

HENRY L. SIGNOR, Alumni Secretary

MILTON H. YUDELL, M.D., Medical Director

Academic Boards and Committees

UNIVERSITY SENATE: President (*chairman*), Vice President, members *ex officio*; Anderson, Bullock, Bumer, Illingworth, Jordan, Jones, Lee, Maxwell, Potter, Reid, Roope, Van Valkenburg, and Werner.

GRADUATE BOARD: President and Vice President, members *ex officio*; Lee (*secretary*), Bullock, Bumer, Hayden, Jones, Jordan, Kegeles, Martell, Maxwell, Melder, Murphy, Nunnemacher, Potter, Roope, Van Valkenburg, Wapner, and Werner.

COLLEGE BOARD: President, Vice President, Dean of Men and Dean of Women, members *ex officio*; Jordan (*chairman*), Beck, Carter, Gunter, King, Melder, and Reynolds.

EVENING COLLEGE BOARD: President, Vice President, and Director of the Evening College, members *ex officio*; Beck, Cohen, Co-malli, Hargest, Letendre, and Melder.

ACADEMIC COUNCIL: President, Vice President, and Chairman of the College Board, members *ex officio*; Hayden (*chairman*), Bumer, Edwards, Jones, Raffman, Reid, Roope, Sugihara, and Wapner.

COMMITTEE ON PERSONNEL AND ORGANIZATION: President, Vice President, and Chairman of the College Board, members *ex officio*; Hayden (*vice chairman and secretary*), Borger, Lee, Maxwell, Nunnemacher, and Werner.

LIBRARY COMMITTEE: Barlow (*chairman*), Beard, and Sugihara.

STUDENT ACTIVITIES FUND COMMITTEE: Roope (*chairman*), Burnham, Hargest, and Sheehan (*treasurer*).

ADMINISTRATIVE COMMITTEE FOR THE DIVISION OF BUSINESS ADMINISTRATION: President and Vice President, members *ex officio*; Hargest (*chairman*), Balko, Jordan, and Maxwell.

STANDING COMMITTEES OF THE GRADUATE BOARD

COMMITTEE ON CREDENTIALS: President and Vice President, members *ex officio*; Van Valkenburg (*chairman*), Bullock, Jones, Lee (*secretary*), Maxwell, and Werner.

COMMITTEE ON PROFICIENCY IN FOREIGN LANGUAGES: President and Vice President, members *ex officio*; Arndt, Reid, and representative of student's major department.

STANDING COMMITTEES OF THE COLLEGE BOARD

COMMITTEE ON ADMISSIONS: President, Vice President, and Chairman of the College Board, members *ex officio*; Borger, Hayden, Hughes, Merriam (*chairman*), Potter, and Roope.

COMMITTEE ON ATHLETICS: President, Vice President, and Chairman of the College Board, members *ex officio*; Potter (*chairman*), Granger, Hughes, Maxwell, and Warman.

COMMITTEE ON SCHOLARSHIPS: President, Vice President, and Chairman of the College Board, members *ex officio*; Bumer (*chairman*), Potter, and Van Tassel.

A Brief History of the University

The establishment of a university requires the cooperation of at least two men, one to furnish the means and the other to furnish the expert knowledge of educational needs. Jonas Gilman Clark, merchant and sagacious businessman, who had made a modest fortune supplying miners and others with manufactured goods during the California Gold Rush, was the man of means. Granville Stanley Hall, professor of philosophy, psychology, and education at The Johns Hopkins University, who had already made an enviable reputation as a vigorous and original scholar, was the educational expert.

Jonas Gilman Clark returned to the east shortly after the end of the Civil War. Upon semi-retirement he returned to his native Massachusetts and established a home in Worcester. With a characteristic New England seriousness of purpose and with a New Englander's almost superstitious belief in education and what it can accomplish, Mr. Clark decided to concentrate his beneficence on the founding of an institution of learning. The later years of his life were devoted to this end with the assistance of his wife, Susan, and a group of leading Worcester men, including, among others, Senator George F. Hoar and General Charles Devens.

The Trustees of Clark University were incorporated in 1887. In the same year construction was begun on a main building and a science building, and G. Stanley Hall was appointed the first president of the university. President Hall, imbued with the ideals of advanced instruction and original research as exemplified by the German universities and the successful experiment at The Johns Hopkins University, set about organizing in Worcester an institution concerned exclusively with graduate studies and research. The men brought together as the faculty constituted a small but brilliant and original group of specialists who soon established the scholarly reputation of Clark University. The doors opened in 1889, and for thirteen years the university devoted its attention solely to graduate study and research. In 1900 when the Association of American Universities was founded Clark University was one of the fourteen charter members.

Although Mr. Clark had supported President Hall's educational

aims and was proud of the achievements of the young university, he was also interested in an undergraduate institution that would be designed to serve young men of limited financial resources. He died in 1900 and a codicil to his will provided for the establishment of a college, in which, in three years' time, young men might secure "preparation for citizenship and their work in life." In addition to the grant for the men's college, the estate increased the endowment of the Graduate School, and of the Library, which would serve both the graduate and undergraduate divisions.

In compliance with the terms of the will the trustees established Clark College with an administration and faculty distinct from those of the graduate school. Carroll Davidson Wright, who was then serving as the first United States Commissioner of Labor, became president of the new college, contributing to it both the prestige of a national reputation and the skill of an experienced administrator.

Clark College in the very beginning differed from the American college of that day. Seriousness of purpose and hard work were expected from the undergraduate. Intercollegiate sports were replaced by intramural contests, and the extracurricular distractions common to college life were cut down to sane proportions. Though entrance requirements were informal, a high standard of performance was necessary to remain in college, and, since the degree of bachelor of arts was granted after three years of study, student programs were heavier than was usual.

The educational program formulated by President Wright and Rufus C. Bentley, first dean of the college, was as decisive in shaping the character of the Collegiate Department of Clark University as President Hall's vigorous and explicit emphasis on original research was decisive in shaping the character of Clark University. The educational ideals of the two divisions are complementary, and with the passage of time the graduate school and the college have become an educational and administrative unit. The college benefits from the instructional, laboratory, and library resources of those departments offering graduate education, and the graduate school benefits from the instructional and library resources of the undergraduate departments. Particularly important to the undergraduate is the opportunity to elect during his junior and senior years courses taught at the graduate level. The amalgam of a pro-

ductive graduate school and a rigorous college program in an academic community whose total enrollment is that of the small liberal arts college is a unique educational situation.

President Wright served the college until his death in 1909. His successor was Edmund Clark Sanford, then professor of psychology in the graduate school.

In 1919, after thirty-two years of service, President Hall asked to be relieved of the responsibilities of his office, and in the following year his resignation was accepted. In the same year President Sanford, feeling that the time was opportune for the union of the college and university under a single administration, asked to be permitted to return to professorial work, thus leaving the field free for any reorganization the trustees might think wise. The trustees elected Wallace Walter Atwood, then professor of physiography at Harvard University, president of both the graduate and undergraduate departments of the university.

During President Atwood's tenure there were significant changes in the educational program and in the physical plant. Geography was added to the courses of instruction at both the graduate and undergraduate levels. The period of residence for the degree of bachelor of arts was increased from three to four years to conform with customary American collegiate practice, and participation in intercollegiate activities, including athletics, was encouraged. In 1941 a program now leading to the degree of Bachelor of Science in Business Administration was established in the college. Also, in 1941, the Women's College of Clark University was established by the trustees, and since the fall of 1942 women have been admitted and are eligible for degrees on the same basis as men. Additions to the physical equipment of the university were a men's dormitory, an athletic field, the Alumni Gymnasium, the Library tower, and an auditorium, Atwood Hall.

President Atwood retired in 1946 after twenty-six years in office. He was succeeded by Howard Bonar Jefferson who, at the time of his selection, was professor of philosophy and Director of the School of Philosophy and Religion at Colgate University.

Since the inauguration of President Jefferson the college program has been enriched by the addition of a department of philosophy and the introduction of a series of general education courses which widen the appeal of the various subjects in which these

courses are offered. A chapter of Phi Beta Kappa, the national liberal arts honor society, was established at the college in 1953. In the graduate school, courses in mathematics leading to the master's degree have been reestablished.

The University presently offers instruction leading to the degree of Doctor of Philosophy in chemistry, economics, geography, history and international relations, and psychology. In addition, the Master of Arts degree may be obtained in the following subjects: biology, education, government, mathematics, physics, and sociology. The undergraduate departments of instruction are business administration, classics, English, fine arts, geology, German, philosophy, and Romance languages.

In September, 1953, the Evening College of Clark University was organized to provide for adults a broad selection of courses leading to the bachelor of science degree in general studies and in business administration. Also available is a varied program of non-credit courses, seminars, and special lectures of a community service nature.

Worcester and the University

When plans for the new university were taking shape in Mr. Clark's mind, he enlisted the aid of a group of far-sighted and influential Worcester citizens from whom, later, the majority of his original board of trustees was chosen. In this was set a pattern for coöperation between the university and the community which has persisted throughout the history of the institution.

The intellectual life of the city has been enriched by the contributions of the faculty and of distinguished guests whom the University has brought to Worcester. Members of the staff have served local institutions both public and private in many ways.

The College has opened the door to higher education for hundreds to whom the opportunity would have been denied if they had been forced to seek it elsewhere. The Graduate School has aided the more gifted to proceed to the highest levels of intellectual endeavor. Particularly noteworthy has been the service to teachers in the public school system.

In turn, the University has benefited by the support, both financial and intangible, which it has received from the citizens of Worcester. The interchange of services and ideas with the staffs of other Worcester institutions and the opportunity to use their libraries on a reciprocal basis have been invaluable.

There is particularly close coöperation between the Department of Fine Arts and the Worcester Art Museum, between the Department of History and International Relations and the American Antiquarian Society, between the Department of Chemistry and the Worcester Foundation for Experimental Biology, and between the Department of Psychology and the Worcester State Hospital. The Worcester Public Library and the Clark University Library coöperate by avoiding duplication in the coverage of certain subjects and by a corresponding widening of the coverage in the fields assigned to each.

The University is conscious that it is a part of the community and that, as such, it has both obligations and benefits. Its steadfast purpose is to strengthen the bonds of mutual interdependence and coöperation.

Buildings and Grounds

THE UNIVERSITY CAMPUS is situated on Main Street approximately a mile and a quarter from the business center of Worcester. The educational and administrative activities of the University are centered here. On adjacent property facing the campus on Woodland and Downing Streets are dormitories, the dining hall, the infirmary, and residences of the President and of the Dean of Men. A small athletic field, opposite the campus on Maywood Street, provides fine clay tennis courts and a running track. A larger field, at the corner of Beaver Street and Park Avenue, is used for baseball, soccer, and other sports. The Hadwen Arboretum, the gift of Obadiah B. Hadwen, is a tract of about twenty acres at the intersection of Lovell and May Streets. The University also owns a number of individual properties in the vicinity of the campus.

THE MAIN BUILDING (Jonas G. Clark Hall), completed in 1889, is a four-story granite and brick structure containing about ninety rooms. It houses the general academic offices of the University and the offices and classrooms of many of the departments of instruction. The University bookstore and the men's and women's lounges are located on the second floor.

THE SCIENCE BUILDING, also completed in 1889, houses the departments of Physics and Chemistry, and is located at the corner of Woodland and Maywood Streets.

THE LIBRARY BUILDING, at the corner of Main and Downing Streets, was enlarged in 1910 by the addition of a wing extending along Main Street. Part of this wing is used for library purposes, but the major portion of the building houses the Graduate School of Geography, the offices of the President and Vice President, and the University News Bureau. A second addition to provide for the growing book collection was added to the library in 1939. This is in the form of a tower which connects the Library Building with Atwood Hall.

ATWOOD HALL, which is entered from Woodland Street, extends along Downing Street to join the library tower. It provides an auditorium with a seating capacity of 800 which is used for college assemblies and other university functions.





THE ALUMNI GYMNASIUM, completed in 1938, is at the corner of Main and Maywood Streets. It provides a playing floor of ample size and seats for 800 spectators. The Gymnasium also contains the offices of the Alumni Secretary and a comfortable lounge which provides a convenient and attractive meeting place for University organizations.

ESTABROOK HALL, at the corner of Woodland and Charlotte Streets, provides dormitory accommodations for men and contains the University dining hall.

Women students are currently housed in three small dormitories on Woodland and Charlotte Streets, and in a large, three-story brick apartment building, acquired in 1958, on Downing Street, directly across from Atwood Hall.

BUILDINGS UNDER CONSTRUCTION

The University is presently engaged in the largest building program in its history, with construction valued at more than three million dollars in progress. The first phase of this program is devoted to expansion and improvement of the University's facilities for instruction in science. A new chemistry building, providing 27,000 square feet of space for laboratories, classrooms and offices, and a multi-purpose lecture hall seating 200 is now in the final stages of completion, and will be in partial use by the fall of 1958. The modern, functional building of brick construction is located on Woodland Street between Jonas G. Clark Hall and the present Science Building.

Upon completion of the Chemistry Building, the present Science Building will be renovated and remodelled to provide improved facilities for the Departments of Physics and Biology.

The second phase of the building program provides for a new Student Center Building which will include a new university commons, snack bar, lounges, offices, and enlarged quarters for the university store. This building, presently under construction, is located on the Main Street side of the campus proper, just north of the Alumni Gymnasium.

The third phase of the program includes two new dormitories, also under construction. The men's dormitory, which will provide excellent modern living accommodations for 195 men, will occupy

property adjacent to the main campus at the corner of Downing and Woodland Streets. The new dormitory for women, with a capacity of 137, will be located on Woodland Street next to the President's house, directly across from Jonas G. Clark Hall.

It is expected that all buildings will be completed and ready for occupancy by the fall of 1960.

The Library

TILTON M. BARRON, *Librarian*

MARION HENDERSON, *Reference Librarian*

ELIZABETH HASSINGER, *Catalog Librarian*

GUY BURNHAM, *Map Librarian*

The Clark University Library contains over 217,000 volumes and a collection of some 50,000 maps and charts. The collection is centrally housed and administered, and an open shelf system fosters free access to books and periodicals for student and scholar. Only rare books and maps and frequently used reference materials are non-circulating.

The collection reflects the history and growth of the University. The scholar's library of the early graduate school and the undergraduate library of Clark College merged and have developed through the years to serve the academic needs of Clark University. The richest holdings are in the fields in which graduate work is offered—geography, psychology, biology, chemistry, physics, mathematics, economics, history and international relations. More characteristically undergraduate in content are the collections dealing with music, fine arts, language, literature, religion, and philosophy. Particular attention is paid to major bibliographical and reference tools, and the Library currently receives nearly 1000 periodicals.

A music library of recordings contains a collection of classical and standard musical works and there is a listening room equipped with a record player.

A Language Center serves as a practice area for those who desire to increase their proficiency in speaking and reading a foreign language. Language records, a phonograph, and a tape recorder are available. A collection of foreign newspapers and periodicals serves to stimulate reading skill and to acquaint the student with the contemporary culture of foreign lands.

The Clark University Library coordinates its acquisition of new material and exchanges material with other libraries in the Worcester area.

Organization

THE GRADUATE SCHOOL offering instruction leading to the degrees of Master of Arts and Doctor of Philosophy.

THE GRADUATE SCHOOL OF GEOGRAPHY offering instruction leading to graduate degrees in Geography.

THE COLLEGE FOR MEN (Clark College) offering a general college program leading to the degree of Bachelor of Arts and a vocational program leading to the degree of Bachelor of Science in Business Administration.

THE COLLEGE FOR WOMEN offering a general college program leading to the degree of Bachelor of Arts and a vocational program leading to the degree of Bachelor of Science in Business Administration.

THE UNDERGRADUATE DIVISION OF BUSINESS ADMINISTRATION which supervises the program in Business Administration in the undergraduate colleges.

THE EVENING COLLEGE offering programs leading to the degrees of Bachelor of Science in General Studies and Bachelor of Science in Business Administration.

THE LIBRARY, with an endowment separate from the endowment of the teaching branches of the University.

THE CLARK UNIVERSITY PRESS, associated with the University for the publication of scientific books and journals.

Admission Information

The following information applies in general to the admission of students to the University. Inquiries concerning admission should be addressed to the following officers at CLARK UNIVERSITY, WORCESTER 10, MASSACHUSETTS:

Undergraduate colleges: *The Director of Admissions.*

Graduate schools: *The Secretary of the Graduate Board.*

The summer school: *The Director of Summer School.*

The evening college: *The Director of the Evening College.*

The University's telephone number is PLeasant 6-1525.

CLASSIFICATION OF STUDENTS

Four classes of students are accepted in the University:

1. UNDERGRADUATES, candidates for the degrees of Bachelor of Arts and Bachelor of Science in Business Administration in the Men's College or the Women's College.

2. GRADUATE STUDENTS, candidates for the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy.

See the announcements of the graduate schools.

3. SPECIAL STUDENTS, persons not prospective candidates for a degree, who wish to take advantage of the opportunities for study provided by the University and who give satisfactory evidence of adequate preparation for the work which they wish to undertake.

Special students are under the supervision of the College Board.

4. SUMMER SCHOOL AND EVENING COLLEGE STUDENTS, who may or may not be candidates for a degree.

See the catalogs of the Summer School and the Evening College.

AUDITORS, registered for attendance but not for credit, may be admitted at the discretion of the administrative officers of the University. They pay the regular tuition charges but are not enrolled as students in the University and do not pay the matriculation fee.

The University reserves the right to require the withdrawal at any time of any student or auditor whose record in either conduct or scholarship fails to meet the expectations implied by his admission.

ADMISSION TO THE UNDERGRADUATE COLLEGES

An application for admission is bound inside the back cover of the catalog. Applications should be carefully prepared and must be accompanied by the applicant's scholastic record and the non-returnable application fee in order to receive consideration. Formal application should be made at the earliest possible date during the applicant's final year in secondary school.

The completion of a four-year high school program or its equivalent, including sixteen acceptable units of credit, is normally required for admission to the freshman class. The term "unit" is understood to mean a course of study in one subject taken throughout the school year (i.e. English, one year = 1 unit). An applicant must furnish official records from all preparatory schools attended.

The subject matter requirements for admission to the freshman class are as follows:

ADMISSION REQUIREMENTS FOR EITHER THE DEGREE OF BACHELOR OF ARTS OR BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Required subjects, 8 units

<i>English</i>	4 units
* <i>Mathematics</i> (algebra and geometry)	2 units
† <i>Foreign language</i> (in one language)	2 units

Restricted electives, 5 or more units in addition to the required units listed above

<i>Mathematics</i>	1 or 2 units
† <i>Foreign language</i>	1 to 4 units
<i>Social studies</i> (history, government, civics, economics, etc.)	1 to 3 units
<i>Natural sciences</i> (physics, chemistry, biology, etc.)	1 to 3 units

Free electives, not more than 3 units

Subjects recognized by the applicant's preparatory school in its regular program, at the discretion of the Admissions Committee.

*Applicants expecting to specialize in science are advised to present at least three units of mathematics.

†Normally required.

†A single "beginning unit" in a foreign language is not recognized as acceptable.

College Entrance Examination Board. All applicants for admission must take the Scholastic Aptitude Test of the College Entrance Examination Board. This test may be taken in December, January, February or March of the applicant's senior year in preparatory school. Applicants may also be required to take the Achievement Tests of the College Entrance Examination Board at the discretion of the Committee on Admissions. The Achievement Tests should usually be taken in March of the applicant's senior high school year.

A bulletin of information concerning these examinations may be obtained without charge from the College Entrance Examination Board, P. O. Box 592, Princeton, New Jersey, or for the far west, from P. O. Box 9896, Los Feliz Station, Los Angeles 27, California.

Scholastic Quality Requirements. In addition to the Scholastic Aptitude Test of the College Entrance Examination Board, "certification" by the principal of the preparatory school in at least fourteen of the sixteen required units is normally necessary for admission without achievement examinations. An exception may be made if the applicant ranks in the upper quarter of the class with which he graduated.

ADMISSION WITH ADVANCED STANDING

A student who wishes to enter the college after attending another institution of college grade is required to submit a letter of honorable dismissal, a complete transcript of his, or her, academic record at the institution last attended, his high school transcript, and such other information as the Committee on Admissions may request. If admitted, the applicant will be provisionally classified as a freshman, sophomore, junior, or senior and will be permitted to register for a program of studies corresponding to this classification. After a semester in residence with a satisfactory record, appropriate credit for courses of college grade which have been completed elsewhere will be recorded.

A graduate of the three year course of the Worcester Art Museum School may be admitted as a candidate for the degree of Bachelor of Arts with the rank of *junior* in the college. In such cases the usual

admission requirements must be met and the general subject-matter requirements of the colleges must be satisfied.

The bachelor's degree will not be conferred upon a student until he has spent at least a year in residence and completed satisfactorily at least five full courses at Clark University, and usually not unless the period of residence includes the two semesters immediately preceding the granting of the degree.

Special conditions affecting students transferring to Clark University as candidates for the Degree of Bachelor of Science in Business Administration are set forth in the general statement of the Division of Business Administration in the "Departments and Courses" section of the catalog.

ADMISSION OF SPECIAL STUDENTS

Applicants for admission as special students should address their inquiries to the Dean of Men or Dean of Women and should be prepared to supply evidence of qualification for the study which they wish to undertake.

ADMISSION OF FOREIGN STUDENTS

Applications from foreign students will not be considered if received after May 1. Foreign students whose native tongue is not English must be able to satisfy the University requirements for proficiency in the English language. Every foreign student must have medical insurance, preferably that of the Institute of International Education.

Tuition and General Charges

Tuition, fees, and general charges are listed below. Certain special fees are also listed under the Graduate School of Geography. Tuition and general charges for the Evening College and Summer School are to be found in the catalogs of those divisions.

All tuition, general charges, dormitory charges, laboratory fees, and miscellaneous fees are due and payable on or before the first day of each semester. No one is permitted to register for any semester until financial obligations have been satisfactorily arranged. Veterans relying on government aid should have enough resources to meet initial payments because the first government checks are often delayed. A penalty fee is charged for late registration and for late payment of tuition.

Application fee. This fee must accompany the application for admission to the undergraduate colleges of the University. The fee is not returnable.

Tuition. Tuition is established on the basis of a student's participation in a normal academic program for four or five courses per year, September to June. Students who enroll for more or less than the normal program pay tuition on a per course basis of approximately one-fifth full tuition.

Tuition refund policy. In the event of withdrawal from the University within the first four weeks of any semester, tuition is refunded on a percentage basis: 80% if a student withdraws during the 1st week; 60% if during the 2nd week; 40% if during the 3rd week; and 20% if during the 4th week.

Activity fee. This fee is paid by undergraduate students and special students carrying more than four courses to cover the costs of certain extra-curricular activities and services. It covers admission to university athletic events and student dramatic productions, subscriptions to the student newspaper and yearbook, and supports certain other approved student programs.

Tuition:

Full program (4 or 5 courses)	\$425.00 per semester
Per course	85.00 per semester

General Charges: (Undergraduate Colleges)

Application fee (nonreturnable)	\$ 10.00
Matriculation fee	5.00
Board at University Dining Hall	220.00 per semester
Activity fee	10.00 per semester
Induction fee (freshmen)	25.00
Induction fee (transfer students)	10.00
Diploma fee (paid senior year)	5.00

Dormitory Charges

Deposit fee	\$ 25.00
Key deposit	1.00
Room rent (for men)	\$110.00 to \$140.00 per semester
Room rent (for women)	\$125.00 to \$170.00 per semester

Laboratory Fees:

For Physics, Biology, Geology, Psychology, and Chemistry 11	\$10.00 per semester
All Chemistry except Chemistry 11	15.00 per semester
For supplies and breakage:	
Chemistry courses except Organic Chemistry	10.00 per year
Organic Chemistry only	20.00 per year

Miscellaneous Fees:

Late registration	\$ 5.00
Late payment of tuition	5.00
Insurance fee (optional)	12.00
Transcripts (two transcripts without charge)	1.00

Graduate School Fees:

Matriculation fee	\$ 5.00
Diploma fee (master's degree)	5.00
Publications fee (master's degree)	10.00
Diploma fee (doctor's degree)	25.00
Publications fee (doctor's degree)	30.00

THE UNDERGRADUATE COLLEGES

Induction and Registration

Student Programs

Requirements for the Bachelor's Degree

Academic Regulations

Honors

Scholarships and Loans

Student Services

Student Activities

Physical Education and Athletics

THE UNDERGRADUATE COLLEGES

The Men's College and the Women's College constitute the undergraduate divisions of Clark University. Financially the two colleges are independent, educationally they operate as a unit.

Admission and degree requirements are identical in the two colleges. The colleges offer educational programs in the liberal arts and in business administration.

The liberal arts program provides education in each of the principal areas of human culture combined with the intellectual discipline resulting from concentration in a selected field of special interest. The program possesses a large degree of flexibility permitting adaptation to a wide variety of individual interests. This program leads to the degree of Bachelor of Arts.

A program leading to the degree of Bachelor of Arts in which the essentials of a liberal education are combined with sound professional foundations in art is offered in cooperation with the Worcester Art Museum. Details of this program are given in the announcement of the Department of Fine Arts.

A description of the special program leading to the degree of Bachelor of Science in Business Administration will be found in the Business Administration announcement, "Departments and Courses" section.

Information which is of interest to all students in the colleges is given in the succeeding pages.

Induction and Registration

INDUCTION

Freshmen, both men and women, entering the University meet in the few days preceding the opening of the academic year for an induction program. It has been customary to spend the induction period at a well-equipped camp or summer hotel where there are ample facilities for recreation. Separate establishments and programs are provided for men and women.

During this period the members of the class become acquainted and meet a selected group of upperclass students as well as members of the college staff. Formal activities include tests which assist in placing a student in the proper class sections, individual and group conferences, and registration for a program of studies.

A modified induction program is provided for upperclassmen and upperclasswomen entering the University. Transfers to the undergraduate colleges do not attend the special camps, but report early for testing, orientation, and registration.

FACULTY ADVISERS

A student admitted to either the Men's College or Women's College is assigned to a member of the faculty who advises the student on a program of courses and other matters. At the beginning of the freshman year the advisers are chosen from a limited group of freshman advisers. Later each student is encouraged to select an adviser of his or her own choosing. A change of advisers may be made on formal request addressed to the Dean.

The adviser assists the student in choosing his program of studies and is available at all times for consultation on any matter which the student may wish to discuss with him. Ideally the adviser-student relationship develops into a relationship of mutual regard which frequently endures long after the college course has been completed.

REGISTRATION

Each student is required to register for a detailed program of courses at the beginning of every semester. Official notice is given well in advance of the dates on which registration is required. Failure to register within the period designated involves a charge of five dollars.

Changes in registration may be made, with the approval of the student's adviser, for a limited time after the end of the registration period. Later changes involve a formal petition to the College Board.

Student Programs

An undergraduate student normally carries a program of five courses throughout the academic year, September to June, in addition to required physical education. In general it is expected that a course meeting three times weekly will require a minimum of two hours of preparation for each lecture or recitation. Laboratory periods are usually three hours in length.

A student carrying the regular program should, therefore, expect his college work to require from forty-five to fifty hours of his time per week, in addition to the time required for physical education.

College regulations are designed to permit a large degree of freedom in the adjustment of programs of study to individual differences of interest. Even in the freshman year, when the program is largely determined by the degree for which the student is enrolled, each student makes certain individual choices where alternative requirements or free electives are involved. Such choices deserve the most careful consideration since they frequently affect the general pattern of a student's program for the entire four years of the college course.

FRESHMAN PROGRAM

A freshman must choose his entire program from courses designated as "open to freshmen."

The following program is required of all candidates for the bachelors' degrees:

1. *English 11*, Composition and Literature.
2. Candidates for the Bachelor of Arts degree—a course in a foreign language.
Candidates for the Bachelor of Science in Business Administration degree—*Principles of Accounting*.
3. A course in "Group A," science and mathematics.
4. A course in "Group B," social sciences.
5. An elective.

Mathematics 11 must be elected by students who expect to major in Group A and students who are candidates for the B.S. in B.A. degree. This includes both pre-medical and pre-dental students.

SOPHOMORE PROGRAMS

A sophomore must give priority in his program to any subject requirements which remain to be satisfied and should provide for an introduction to the field or subject in which a "major" or an "integrated program" will be chosen. The remaining elective choices provide the opportunity for each student to broaden the range of his interests.

The selection of a major subject is required of candidates for the degree of Bachelor of Arts at the time of registering for the sophomore year. Candidates for the degree of Bachelor of Science in Business Administration select an "area of concentration" at the same time.

Sophomores may elect any course designated by a number beginning with the numeral 1, indicating "primarily for undergraduates"; they are not admitted to courses "for advanced undergraduates and graduate students," designated by numbers beginning with the numeral 2.

JUNIOR AND SENIOR PROGRAMS

Programs for the junior and senior years should be planned as a unit. This brings the entire college course under scrutiny; concentration, balance and diversity can be seen in relation to each other and adjusted to desired proportions; the inevitable choices between desirable courses, since all cannot be included in the program, can be made and costly mistakes due to haste and the overlooking of important facts can be avoided. Failure so to plan may result in the omission of important courses because of conflicts in the schedule or the alternation of courses in successive years.

Juniors and seniors may elect any courses "primarily for undergraduates" or for "advanced undergraduates and graduate students" subject to any conditions stated in the descriptions of the courses. Under special conditions and with the approval of the College Board and of the Secretary of the Graduate Board in each case, seniors who rank in the upper third of their class may be admitted to

courses "primarily for graduate students" designated by numbers beginning with the numeral 3.

ACCELERATED PROGRAMS

At least three years of college study in residence is required for a bachelor's degree. A student may earn the degree in this minimum time, or in three and one-half years, if he is prepared to make the additional effort which is required and is able to maintain the required level of scholarship.

Such accelerated programs are possible through a combination of six-course programs during the regular academic year and attendance at summer schools. Credit toward a degree for study at a summer school is granted only when it is officially authorized in advance in each individual case.

To complete the requirements for a bachelor's degree at the end of three years it is necessary for a student to carry a six-course program through all three years and to attend two six-week summer schools. Only students of exceptional ability and in excellent physical condition are advised to undertake such a program. To complete the requirements for a bachelor's degree at the end of three and one-half years it is necessary for a student to accumulate, within that time, credit for two and one-half courses in addition to a regular program. This may be accomplished without attendance at summer school if the student carries a six-course program through two and one-half years. More commonly a student will attend two summer schools and carry a six-course program through three semesters, or attend three summer schools and carry six courses through two semesters.

SIX-COURSE PROGRAMS

A student whose average grade for any semester is C+ or better is permitted to register for a program of six courses for the following semester.

A senior whose graduation within the academic year depends on the completion of a six-course program during that year may register for such a program in either semester if his average grade for the preceding semester is C— or better.

A freshman may normally register for a program of six courses in

the first semester of his freshman year. In subsequent semesters he is subject to the regulation stated above.

For tuition charges see "per course" rate given under "Tuition and General Charges."

WASHINGTON SEMESTER PROGRAM

The University participates in the Washington Semester program of The American University at Washington, D. C. Under this program a small number of superior students may be nominated to attend a semester (normally in the junior year) in the study of the United States government in the nation's capital.

This opportunity is particularly, but not exclusively, attractive to students majoring in government, international relations, history, economics and sociology. Full credit for the semester's work is given toward the degree at Clark. Inquiry and application should be made to the Chairman of the College Board.

PARTIAL PROGRAMS

Under special circumstances programs of fewer than five courses may be permitted. In general no change of status or of obligation is involved when a student's program is reduced to four courses, nor is there any reduction in the charge for tuition.

A student whose program consists of fewer than four courses is designated as a part-time student. Part-time students are excused from the requirement in physical education, are not required to attend the weekly assembly and do not pay the "activities fee".

For tuition charges see "per course" rate under "Tuition and General Charges."

PROGRAMS FOR SPECIAL STUDENTS

Special students register for such programs as they agree upon in consultation with the instructors concerned. They are not required to attend the weekly assembly nor are they subject to a requirement in physical education. Special students who register for programs of four or more courses are required to pay the activities fee; others are not required to pay this fee.

For tuition charges see "per course" rate under "Tuition and General Charges."

PRE-PROFESSIONAL PROGRAMS

One function of the undergraduate colleges is to prepare students going on to a professional school or into graduate study. The proper foundation for subsequent training in many of the professions may be gained at Clark University. A student planning a professional career should consult with his adviser as early as possible in his college course in order to best shape an undergraduate program.

Although professional schools hesitate to lay down rigid requirements for admission, there are some professional areas, such as medicine and dentistry, which by the nature of the subject call for some undergraduate emphasis on preparatory subjects. In the case of teaching, Clark University itself provides those courses necessary for state certification, as well as offering a graduate program in education.

For information on pre-medical and pre-dental programs see under the Departments of Biology and Chemistry. For information on requirements for teaching consult the introductory material in the Department of Education course section. A pre-legal statement may be found under Sociology in the course listing for Economics and Sociology.

Requirements for a Bachelor's Degree

A student in good standing who completes the requirements for either the degree of Bachelor of Arts or the degree of Bachelor of Science in Business Administration as stated below will be recommended for the appropriate degree unless, in the judgment of the College Board, there is cause for withholding the recommendation.

The following requirements apply to all candidates for a bachelor's degree:

1. *Residence.* A student must be in residence at least three academic college years. At least one full year and usually the last year before the degree is conferred must be spent at Clark University. Five one-year courses must be satisfactorily completed for each year in residence.

2. *Course Requirements.* All college regulations concerned with credit toward a degree are expressed in terms of courses. A course as a unit of credit normally implies three or four class meetings or laboratory exercises per week throughout two semesters and constitutes one-fifth of a student's normal program. If fractional courses are offered, these will be combined in computing total course credits. Undergraduates admitted to classes primarily designed for graduate students receive one-half course credit per semester irrespective of the number of weekly class meetings. Twenty full courses at a satisfactory level of scholarship are required for graduation.

3. *Physical Education.* Each undergraduate must complete three years of physical education, two hours per week.

4. *Assembly.* All undergraduates are required to attend the regular assembly.

Course credit may be obtained at the undergraduate level in the fields of instruction which for administrative purposes are classified into four "groups" as follows:

GROUP A (Science and Mathematics). Biology, botany, chemistry, experimental psychology, geology, mathematics, physics, and physiology.

GROUP B (Social Science). Economics, education, geography, government, history, international relations, philosophy, psychology, and sociology.

GROUP C (Language and Literature). Greek, Latin, English, French, German, Spanish, and an interdepartmental course in language and literature.

GROUP D (Fine Arts). Art and Music.

In addition to the general requirements for a Bachelor's degree previously listed, there are certain specific requirements for the degree of Bachelor of Arts and other equally specific requirements for the degree of Bachelor of Science in Business Administration.

SPECIAL REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

1. A MAJOR. A *departmental major* consists of *seven* courses designated by the department for this purpose. Four or five of these must be courses in the major subject, the remaining courses must be in fields of study closely related to the major department. A grade of higher than C— is required in at least eleven of the fourteen semester grades involved in the completion of an acceptable major.

Mathematics 11 is a freshman year requirement for all students intending to major in Group A (Science and Mathematics) including those who are taking pre-medical and pre-dental programs. Mathematics 11 may, with the major department's approval, be included in the seven courses constituting the major.

Students majoring in Group C (Language and Literature) who have not offered at least two units of Greek or Latin for admission are required to take a year's course in either classical civilization or elementary Greek or Latin. The course satisfying this requirement may, with the approval of the major department, be included in the seven courses constituting a major. The student's choice

of classical civilization or Greek or Latin is subject to the approval of the major department. If a language course is chosen, this requirement should normally be satisfied during the freshman year.

An *interdepartmental major* includes *eight* or more courses chosen with regard to related content and purpose in fields which cross departmental boundaries. Two such programs are now available. These will be found fully outlined in the catalog section entitled "Departments and Courses."

2. GROUP A (Science and Mathematics). Two courses, one in each of two different fields. The two courses may not be distributed between more than two fields of study. One of them *must* be a laboratory course. Courses in the history of the sciences are not counted toward the fulfillment of this requirement.

3. GROUP B (Social Science). Two courses, one in each of two different fields. The two courses may not be distributed between more than two fields of study.

4. FOREIGN LANGUAGE. Each student must complete a course in a foreign language at or beyond the third year college level. Language study must begin in the freshman year. A student whose previous education has been in a language other than English may be relieved of the foreign language requirement upon the successful completion of the freshman English course.

5. ENGLISH. The requirement for a Bachelor of Arts degree includes one and one-half courses, English 11 in the freshman year and an additional half course. All students are required to maintain satisfactory proficiency in English.

6. FINE ARTS. A half course in Fine Arts or Music or a year course in a foreign civilization must be completed.

SPECIAL REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

An integrated program developed around a "core curriculum" of twelve and one-half required courses consisting of the following:

English 11	Composition and Literature
Mathematics 11	Freshman Mathematics
BA 100	Principles of Accounting
Economics 11	Principles of Economics

BA 160	Business Statistics
Government 15	Introduction to Government
BA 170b	Principles of Management
BA 150a	Principles of Marketing
Economics 13a	Money and Banking
BA 120a	Corporation Finance
BA 140	Business Law
BA 290	Analysis of Business Problems
English 12a	Public Speaking

One year course in a laboratory science.

One year course in a social science, during the freshman year.

The student is also required to present no less than four and no more than five courses in an area of concentration. See the announcement of the Division of Business Administration in "Departments and Courses" for a description of these concentration areas and their programs.

High ranking students in Mathematics 11 may, with the consent of the Director of the Division, meet the requirement for Business Statistics by substituting Economics 29a, Statistical Methods, for BA 160, Business Statistics.

Academic Regulations

GRADES

At the end of each semester grades are reported for each student in each course in terms of A, excellent; B, good; C, average; D, poor; F, failure. The modifying symbols plus (+) and minus (—) are used with each of these letter grades with the exception of F, giving twelve levels of passing grades. A report of “incomplete” is permitted only when severe sickness or some other equally unavoidable circumstance prevents the completion of a course.

A record of “failure” in a course is final and not subject to change on the basis of any subsequent performance of the student who is involved. Credit for a course in which a failure has been reported may be secured only by repeating the course and earning a passing grade. A record of “incomplete” incurred in the first semester must be made up by the end of the academic year; if incurred in the second semester or summer term, it must be made up by “mid-semester” of the following fall. For a course not completed within the specified time the record of “incomplete” is changed to one of “failure.”

SCHOLARSHIP STANDARDS

Courses with the grades of D+, D or D— may not be counted toward a bachelor's degree beyond one-quarter of the total credit required; i.e., not more than five (5) such courses, or their equivalent in fractional courses, may be counted. In the administration of this regulation only grades received and credit earned in Clark University are considered. If grades are not available for some of the twenty courses required for the degree, the maximum credit which may be counted with grades of D+, D or D— is reduced to one-quarter of the total credit from all courses in which grades are available.

Classification of students. A student continues to be listed in the class with which he or she entered college until the end of the third, or junior, year. At this time only those students who have credit for at least fourteen courses with a minimum of eighteen semester grades of C— or better are promoted to the senior class.

Probation. Students with unsatisfactory grades are placed on probation. Failure of a student to remove himself from probation after two consecutive terms or three non-consecutive terms normally results in separation from college.

EXAMINATIONS

Final examinations are regularly given at the end of each semester in all college courses. Approximately two weeks are set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, usually results in a record of failure in the course.

Other examinations and tests may be given at any time during the semester at the convenience of the instructors.

ATTENDANCE

Students are expected to be present on the first day of each term and to continue in attendance from day to day to the end of the term.

Attendance at a fortnightly college assembly is required, except in the case of part time and special students.

Regulations applying to absences from scheduled class meetings and laboratory exercises are based upon the conviction that such absences, regardless of their cause, involve a loss to the student and a drag upon the class. Students are, accordingly, expected to be consistently regular in attendance. Subject to this general provision, students are given a considerable degree of freedom in the control of their attendance. It is expected that such freedom will not be abused, and that it will contribute to the growth of each student's sense of responsibility.

Special regulations apply to attendance at assembly and physical education.

Honors

The colleges award "annual honors" to outstanding students in each of the three lower classes, and grant the bachelor's degree with distinction under the conditions described below.

ANNUAL HONORS

First honors and *second honors* are awarded at the end of each year to members of the freshman, sophomore, and junior classes who have, in the judgment of the College Board, distinguished themselves by their scholarship during the year.

COURSE HONORS

The bachelor's degree is awarded *cum laude*, *magna cum laude*, and *summa cum laude* to members of each graduating class whose records, in the judgment of the College Board, warrant this distinction.

DEPARTMENTAL HONORS

A program leading to a bachelor's degree with honors in a particular subject may be undertaken by a student at the beginning of the junior year. This opportunity is open to candidates for either the degree of Bachelor of Arts or Bachelor of Science in Business Administration. Under this plan the department appoints an honors' adviser who cooperates with the student in working out a unified program of courses for the junior and senior years. This program may include a maximum of two "honors courses" in which he works with a large measure of independence under the supervision of the adviser. In the senior year each candidate must pass satisfactorily a comprehensive examination given by his major department.

Any student may apply in writing to his major department for permission to take honors work, not later than the first day of May in the sophomore year. The approval of the department is necessary for admission to such work. In exceptional cases, application may be made and admission approved by the department concerned up to the end of the first semester of the junior year, but only with the consent of the College Board.

Admission to candidacy for departmental honors does not relieve a student from any of the standing regulations of the college except as specifically stated above. A student's candidacy for honors will be terminated at the end of any semester in which he has not maintained a standard satisfactory to his department. If candidacy is terminated for any reason, the amount of credit to be allowed for "honors courses" will be determined by the College Board in consultation with the major department.

On conclusion of the honors program, including a comprehensive examination, the department may recommend the student's graduation with honors, high honors, or highest honors. Only students meeting the standards of the College Board for the degree *cum laude* may receive departmental recommendation for high or highest honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies—those studies concerned principally with a knowledge, understanding, or appreciation of the natural and social world in which we live. The Society establishes chapters in colleges and universities throughout the United States where the curricula are broadly cultural in scope and where high standards of scholarship are maintained.

In harmony with the underlying purposes of the Society, the Clark chapter, Lambda of Massachusetts, established in 1953, seeks to foster among undergraduates an appreciation of the contributions to culture and civilization which have been made by liberal studies.

Each year the Chapter elects to membership a limited number of juniors and seniors whose programs have been definitely liberal in character and who have achieved distinction in scholarship.

As a result of the installation of a chapter of Phi Beta Kappa at Clark University in 1953, the Clark Scholarship Society, organized in 1914, became inactive and assumed the status of an alumni organization.

Scholarships and Loans

Scholarships are provided by the University from endowed funds and from other sources. Financial aid to students is available also in the form of grants from a number of special funds. A limited amount of part-time employment is available in the various offices and departments of the University. Frequently, as in the case of departmental assistants, this is of a kind which yields useful experience.

Loans for educational purposes are available from a number of funds which have been created for this purpose. Loans are made to undergraduate students at an annual interest rate of 4%. It is expected that all borrowers will begin repayment of loans shortly after graduation.

Many scholarships and educational loans are provided by local sources in communities throughout the nation. Any interested person should address inquiries to school officials, churches, fraternal organizations, chambers of commerce, etc.

Information on graduate fellowships, scholarships, and loans may be found in the announcement of The Graduate School.

SCHOLARSHIPS

Undergraduate scholarships are generally awarded on the basis of financial need with due regard to character and ability. The scholarships vary in amount and are in some cases restricted to residents of a definite locality or to those studying particular subjects.

To be eligible for a scholarship, an entering freshman must have a scholastic record which places him in the upper third of his preparatory school class. A college student is eligible if he has secured a rank in the upper half of his class for the preceding semester.

Scholarships are awarded at the beginning of each semester. Ordinarily an award for the first semester is continued through the second semester if the holder maintains a position in the upper half of his class for the first semester.

Applications for undergraduate scholarships should be filed at an early date on forms which may be secured from the college office.

Incoming freshmen applying for scholarship aid do so through

the College Scholarship Service, Box 176, Princeton, New Jersey (or Box 27896, Los Angeles 27, California, for the West Coast). The Service provides the University with an independent analysis of the applicant's financial needs. Application forms may be obtained at the student's secondary school, or from the Director of Admissions.

Aid given in the form of scholarships is not regarded as a loan. It is recognized, however, that those who receive such aid may wish to return the amount in later years. Funds for scholarship purposes are much needed and greatly appreciated.

The following scholarships are currently available to students in the undergraduate colleges with the restrictions noted.

The Ellis-Hubley Competitive Scholarships. These are competitive scholarships restricted to male residents of Worcester who have graduated from Worcester secondary schools. The stipends, \$950 annually to each beneficiary, are provided by money set aside from the income of funds bequeathed in memory of Gordon A. Hubley, Clark 1910, and of Theodore T., and Mary G. Ellis. One appointment is made each year to a member of the freshman class and the award is normally continued throughout the four years of the college course.

A candidate must receive the recommendation of the Principal or Head Master of the school in which his preparation for college is completed, before his application can be considered. Two full tuition scholarships are awarded annually to applicants who, in the judgment of the Committee on Scholarships, stand next below the successful applicant.

The Jonas G. Clark Scholarships. These scholarships have been established by the trustees to provide either full tuition or half tuition for undergraduate male and female students from outside of Worcester.

The Theodore T. and Mary G. Ellis Scholarships. These scholarships provide either full tuition or half tuition for male or female residents of Worcester who are students in "the collegiate department of Clark University."

The Sanford Memorial Scholarship. The Sanford Memorial Fund was established by alumni of the University in honor of Edmund C. Sanford, president of Clark College from 1909 to 1920. The Fund provides an annual scholarship amounting at present to approximately \$200 for a male senior undergraduate.

The Livermore and Ambulance Scholarship. The endowment for this scholarship was provided by citizens of Worcester in honor of Charles Randall Livermore, the first Clark man to fall in battle in the first World War, and of his companions in the Clark Unit of Ambulance Drivers. Fifty dollars or more is awarded annually on the basis of academic success, character, and usefulness to the college. This scholarship is for male undergraduate students who are residents of Worcester County.

The Henry A. Willis Scholarships. Male students from Fitchburg, Massachusetts, and vicinity have first consideration in the award of these scholarships. In the absence of suitable candidates from this community grants may be made to others.

The Helen Brewster Randolph Memorial Scholarship. A fund, established by the late Professor Charles B. Randolph in memory of his mother, provides about \$250 annually for scholarships restricted to male college students, preferably those whose major is a foreign language.

The Gordon A. Hubley Scholarships. These scholarships are provided by a fund which was bequeathed by Alice B. Hubley in memory of her son, a graduate of the college in the class of 1910. The income is for the assistance of male undergraduates who are residents of Worcester.

The Alice Friend Newton Memorial Scholarship. This scholarship provides full tuition for a student in the Women's College whose major is psychology.

The William Richardson Scholarship. This scholarship was established by a bequest of Carlton E. Richardson of the college class of 1908 as a memorial to his father. The income of a fund of \$7,500 is available "preferably for the education - - - of boys of the Protestant faith."

The Jennie L. Richardson Scholarship. This scholarship was established by a bequest of Carlton E. Richardson of the college class of 1908 as a memorial to his mother. The income of a fund of \$7,500 is available "preferably for the education - - - of girls of the Protestant faith."

The Ernest R. Whitman Memorial Alumni Scholarship. The fund, established by the Alumni Association in honor of the Director of Physical Education for Men at Clark College from 1904 until his death in 1948, provides financial aid to men or women students

possessing high qualities of leadership.

The B'nai B'rith Scholarship. The Worcester Chapter, Order of B'nai B'rith provides a scholarship which is primarily but not exclusively for the aid of Jewish students.

The Probus Club Scholarship. The Probus Club of Worcester offers an annual scholarship of two hundred dollars.

The Clark University Faculty Women's Club Scholarships. These scholarships are available to undergraduate students, either men or women, who rank high in intellectual and personal qualities.

The Clark University Alumnae Association Scholarships. Two scholarships are customarily offered by the Alumnae Association to students in the Women's College.

The National Council of Jewish Women Scholarship. The Worcester Section, National Council of Jewish Women, awards a \$200 scholarship each year to a Jewish girl from Worcester or Worcester county who is attending Clark University.

The Soroptimists Club Scholarship. The Soroptimists Club of Worcester provides an annual scholarship for a student in the Women's College.

The Aaron Fuchs Memorial Scholarship Fund, given by Mrs. Celia Fuchs in memory of her husband and in honor of her sons Lawrence and Jerome Fox of the classes of 1944 and 1953 respectively, provides scholarship aid for non-residents of Worcester or of Worcester County. Awards under this fund are made by the Scholarship Committee.

EDUCATIONAL LOANS

Loans are available for undergraduate students from the funds listed below. These loans bear interest at the rate of 4% per year. Applications for loans should be made at the office of the Treasurer.

THE ALUMNI LOAN FUND was established by the trustees and the alumni.

THE ESTABROOK LOAN FUND was created by the generosity of the late Arthur F. Estabrook of the Board of Trustees.

THE HASKELL TALAMO LOAN FUND has been established by relatives and friends of the late Doctor Haskell Talamo, A.B., Clark University, 1916.

THE LOUIS N. WILSON FUND, established by the first librarian of Clark University, is a loan fund for male students in the college.

Student Services

DINING HALL

The University Dining Hall in Estabrook Hall is operated for the convenience of the students and staff of the University. Service is cafeteria style.

Undergraduates who do not live at home are required to eat at the Dining Hall. This fact must be recognized and subscribed to by all who seek admission to either the Men's College or the Women's College. Other members of the University are welcomed on a permanent basis or for single meals.

DORMITORIES

At present *Freshman men* not living in their own homes or with near relatives are required to room in Estabrook Hall. Upperclassmen may now room at fraternity houses or rent private rooms in the university neighborhood. Upon completion of the new men's dormitory, tentatively scheduled to open in September 1959, men admitted in 1958 and later will be required to live in college housing.

Rooms are reserved for freshmen on receipt of the dormitory deposit fee. Students who indicate a desire for a room together will be accommodated whenever possible.

The deposit is returned, less a charge for lights and for any damages to the room or its furnishings, after the key to the room is surrendered to the Bursar.

Women students not living in their own homes or with near relatives are required to room in one of the Women's dormitories. Other arrangements are permitted only on written request from a parent or guardian and the consent of the Dean of Women.

There are five dormitory units, each housing from fifteen to thirty students. Each unit has its House Mother and a dormitory committee which meets with the House Mother to consider matters pertaining to dormitory living. A Dormitory Council composed of student representatives, the five House Mothers and the Dean of Women meets once a month to discuss matters of interest to the dormitory residents.





Room reservation and deposit procedures are the same for the women's dormitories as for the men's dormitory.

INFIRMARY

The Infirmary, located at 6 Downing Street, opposite the University Library, is open during the academic year. A nurse is in attendance and the University physicians are on call. Facilities are provided for the treatment of emergencies and for minor medical services to all students while they are on the campus; in addition there is provision for the temporary hospitalization of resident students in cases of more serious illness.

No special fee is charged for the health services available at the Infirmary. A student has the option of subscribing to a low-cost health and accident insurance, which will cover other medical contingencies during the academic year. The insurance fee is \$12.00.

GUIDANCE AND PLACEMENT BUREAU

JAMES M. COFFEE, Ed.D., *Director*

The guidance service provides individual counseling on problems concerned with planning a vocation, and on problems of adjustment to college life. This service supplements the advisory services of the individual teachers and deans of the University.

The placement service assists the student in job exploration. The service informs the student of available positions and arranges interviews with representatives of organizations in business, government, and education. Students are urged to establish a permanent personal reference file. The Bureau provides the forms for those papers which are kept on file and are available for the student's use at any time before or after graduation.

Part-time employment opportunities are also listed with the Bureau for students who wish to work in order to help meet college expenses.

PSYCHOLOGICAL CLINIC

In 1950 the Department of Psychology instituted the Clark University Psychological Clinic for the purpose of providing testing and counseling services to students of the college who wish help in their academic or personal adjustment. Where indicated, other

more appropriate university or community resources can be recommended to the student.

The staff of the Clinic includes the Director, Dr. Robert W. Baker, other clinical psychologists in the Department of Psychology, and consultants in psychiatry, psychiatric social work, and clinical psychology.

Student Activities

Student life at Clark is, as would be expected at a small institution, friendly and informal. Fixed rules and regulations are few, the assumption being that students will conform to the recognized standards of morality, good order, and consideration for others. College activities are under the minimum degree of faculty oversight which is necessary to insure responsibility in business dealings and consideration of the welfare of the individual student and of the college community.

Opportunities for recreation are found in dramatic clubs and musical clubs, under expert direction; in editing and publishing the college newspaper (*The Clark Scarlet*), the literary magazine (*Helicon*), and the senior yearbook (*Pasticcio*); also in such organizations as the Debating Council and International Relations Club.

Formal "proms", informal "Bohemes" and fraternity activities furnish further opportunities for social life. One of the University buildings houses the Student Union, and a men's lounge and a women's lounge provide meeting places for formal or informal groups in the Main Building. For many students, the most prized opportunity for social contacts is in the offices and laboratories, where members of the faculty may be visited with ease and freedom.

The Men's and Women's Senior Honor Societies, Gryphon and Pleiades, select each year from the junior class a group of outstanding men and women who constitute the membership of the societies for the following year. The societies play an important part in campus life and in maintaining the traditions of the college. Among the regular functions of Gryphon are the supervision of the annual

"rope pull" between the freshman and sophomore classes and the management of "Spring Spree Day." Pleiades sponsors the Christmas tea and an annual lecture, assists at general college social functions, and in recent years has provided scholarship aid to one or more women students.

The Scarlet Key is a sophomore-junior service organization. In addition to acting as guides for campus visitors, Scarlet Key members undertake various activities and projects beneficial to the University.

The Activities Fee. Non-athletic activities are partially supported by an activities fee. This fee also admits a student, without additional charge, to all athletic contests held on the college grounds, provides him with the college newspaper and yearbook, and admits him to plays and concerts presented by the dramatic and musical clubs.

Eligibility for Non-competitive Activities. All students may participate so long as their scholarship proves satisfactory. Details are published in the Students' Handbook.

Physical Education and Athletics

PHYSICAL EDUCATION

Physical education is required of all students for the general promotion of their health and mental efficiency. Three years of physical education, two hours per week, is a prerequisite for graduation. Physical education is scheduled at times which avoid conflict with recitation hours. Students are usually excused from this requirement only on the recommendation of the medical director.

The physical education programs for both men and women are closely correlated with intra-mural sports. The physical education program for women requires, during each of the three years, attendance at classes in body mechanics and one of the rhythmic activities. Participation in one group sport and in one individual sport is also required. Folk dancing, square dancing, and modern dancing are offered. Swimming and life saving courses are available through the entire year by arrangements with the Young

Women's Christian Association. These courses are conducted by a member of the physical education staff of the University.

ATHLETICS

THE MEN'S COLLEGE. Students in the Men's College have the opportunity to participate in intercollegiate soccer, baseball, tennis, basketball, golf and crew. Competent coaches have immediate supervision over the athletic teams. In addition to the program of intercollegiate athletics there is an extensive program of intra-mural sports.

Eligibility for Competitive Activities. Participation in organized extracurricular competitive activities is denied only when a student's scholastic record indicates that continuance in an activity might be responsible for scholastic failure.

Any student carrying less than a full program of studies is ineligible unless his reduced program permits graduation at the end of the year in which that program is carried.

Students admitted with advanced standing from another college are ineligible during the first half-semester of residence at Clark College.

A special student is normally not entitled to participate in competitive activities of the college. The College Board may, however, permit such participation in the case of a special student who is enrolled for a program of five courses.

General supervision of the athletics program is vested in the Committee on Athletics, consisting of the Directors of Physical Education, the faculty Committee on Athletics, and the Athletic Council.

THE WOMEN'S COLLEGE. Students in the Women's College have the opportunity of participating in several types of athletics. Offered in the fall and spring are hockey, crew, archery, tennis, fencing, softball, and golf. Tournaments are held in the spring and fall and a cup is awarded to the winner of each event. During the winter months basketball is the principal organized athletic activity; volleyball and badminton are also offered. Women students use their own gymnasium for practice, but have the use of the University Gymnasium for games with outside organizations.

The Women's Athletic Association arranges for all sports activities both within the college and with other colleges in the New England area.

GRADUATE SCHOOLS

The Graduate School

The Graduate School of Geography

THE GRADUATE SCHOOL

GENERAL INFORMATION

Clark University was initially established as one of America's first institutions dedicated exclusively to graduate study and research. Its faculty and graduates have endowed the University with an impressive record of accomplishments through the years. The Graduate Board, under the chairmanship of the President of the University, is the administrative organ of the Graduate School.

Today, the University continues to emphasize graduate education by offering to both men and women special facilities and advanced instruction required for independent study and research.

Programs leading to the degrees of Master of Arts and Doctor of Philosophy are available to qualified holders of a bachelor's degree or its equivalent of attainment.

MASTER OF ARTS degrees are offered in the fields of biology, chemistry, mathematics, physics, economics, history, government, international relations, geography, sociology, psychology, and education.

DOCTOR OF PHILOSOPHY degrees are conferred in chemistry, economics, history, international relations, geography and psychology.

Departments which are not at present organized to accept candidates for graduate degrees, do offer numerous courses, not listed above, which are suitable for inclusion in a program of graduate study.

Scholarships and fellowships afford financial aid to candidates for the graduate degrees and are listed at the end of this section. Additional information peculiar to the Graduate School of Geography is contained in the next section of the catalogue.

General inquiries and correspondence concerning the Graduate School should be addressed to:

The Secretary of the Graduate Board,
Clark University,
Worcester 10, Massachusetts.

Inquiries concerning specific programs of graduate work and applications for admission should be addressed to the chairman of the department concerned.

ADMISSION TO THE GRADUATE SCHOOL

Admission to the Graduate School may be granted only by the Graduate Board on the recommendation of a department of the University. Admission does not imply admission to candidacy for a degree.

Application. A prospective applicant should communicate with the department in which he expects to do his major work. If he is encouraged by the department to make application, he will be provided with application blanks. These should be returned to the chairman of the department with an official transcript of undergraduate work, and letters of recommendation from at least two persons who are competent to judge the applicant's qualifications.

In addition, applicants for admission to the Graduate School are strongly urged, and may be required, to submit a record of attainment in the Graduate Record Examination, given by the Educational Testing Service, Princeton, New Jersey.

Applications for both admission and for financial aid should be completed not later than March 1 if the applicant intends to begin his studies in September. Applications may be submitted, however, at any time throughout the year and periodically are considered by the Graduate Board.

Admission. In granting admission, the Graduate Board may, with the advice of the department, prescribe a minimum period of residence, never less than one year, and other definite requirements, including courses in particular subjects, as prerequisites for a graduate degree.

Admission to the Graduate School is granted for entry only at a specified time, and lapses if the student fails to enter at that time. If, after an applicant has entered the University as a regular student, his period of graduate study is broken by more than a year, he must make formal application for reinstatement.

Admission as special or part-time graduate students may be granted to qualified applicants who do not wish to work for a degree or who cannot devote full time to study.

THE DEGREE OF MASTER OF ARTS

An academic year of full-time study in residence, or its strict equivalent in summer sessions and part-time study, is a minimum requirement for a master's degree. Residence study is broadly

defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the university faculty.

A reading knowledge of a foreign language, usually French or German, may be required of candidates for the degree of Master of Arts at the discretion of the major department.

Candidacy. Application for admission to candidacy for a master's degree should be filed with the Secretary of the Graduate Board not later than the first week of the last full semester which the student expects to spend in residence as a candidate for this degree.

Applications will be considered by the Graduate Board when the student has:

1. Completed one semester of full-time graduate work or its equivalent in residence at this university;
2. Obtained the written endorsement of his major department;
3. Paid the diploma fee (\$5) and publication fee (\$10).

Candidacy for the degree of Master of Arts holds good for three years from the date of admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If the candidacy expires without the degree having been awarded, the diploma and publication fees, less any expenses incurred, are returned.

Course requirements. Each student must meet a minimum course requirement of five courses, or their equivalent in half courses. The program must be approved by the major department. One of the courses may be a research course devoted to the preparation of the thesis.

Thesis. The thesis will be written on a topic in the field of the student's special interest under the supervision of a member of his major department. A copy of the thesis, a précis of it, approved by the supervising instructor, and an academic history page must be deposited in the Registrar's office not later than three weeks before the date of the Commencement at which the degree is to be conferred. A second copy of the thesis, with a copy of the précis must be delivered to the major department. The précis must not exceed seventy-five words in length. The title page, précis, and academic history forms are obtainable from the Registrar. The ribbon copy

of the thesis must be typed on prescribed paper, marginally ruled in black, obtainable at the college bookstore.

The thesis is deposited by the Registrar in the University Library. The *précis* is printed by the University in an annual publication.

Each candidate must make a satisfactory record in such written examinations as may be required by the major department, and in a final oral examination by a committee of three or more, two of whom must be members of the Graduate Board.

THE DEGREE OF MASTER OF ARTS IN EDUCATION

The residence, candidacy, course, and examination requirements are basically the same as those listed above for the Master of Arts.

Thesis. Students may choose one of the following options, subject to the approval of the Department of Education:

- (1) Prepare a thesis or special report, as required for the M. A.
- (2) Elect two additional semester courses in subject matter fields.
- (3) Elect a two-semester, or double, seminar in which papers are prepared and presented to fellow students and staff.

For further particulars, see the announcement of the Department of Education.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation, and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of Doctor of Philosophy.

Residence. The minimum requirement is one year of full-time study, or its equivalent in part-time work, in residence, broadly defined as graduate work done at Clark University under the immediate supervision of at least one member of the University faculty.

If the M. A. has been earned at Clark, this requirement is an addition to the residence requirement for that degree. For the Ph.D. degree, four courses, or the equivalent in half-courses, is normally a full-time program.

Requirements in foreign languages. A prospective candidate for the doctor's degree is advised to prepare himself early for the examinations in the reading of modern foreign languages. Usually the

student must pass two language examinations. French and German are normally required; but the Graduate Board may authorize the substitution of another language for one of these, and a student's major department may require additional languages.

A department, under special circumstances and with the approval of the Graduate Board, may permit a student to substitute the following for the usual language requirements: (1) The passing of an examination in either French or German and in addition, certification by the department that the candidate has demonstrated a working knowledge of the language in the departmental program; (2) The satisfactory completion of an additional program of studies in a field related to the major program.

The language examinations are conducted by a committee composed of representatives of the modern language departments and a representative of the student's major department. The results of the language examinations are reported to the Registrar by the language committee; the results of the substitute requirements are reported by the department. A student must fulfill the above requirements before he will be permitted to take the preliminary examination for the degree of Doctor of Philosophy.

Foreign students whose native tongue is not English may petition the Graduate Board, subject to the approval of the department concerned, to omit either French or German if both languages are not necessary for the field of concentration.

Candidacy. Applications for admission to candidacy must be filed not later than November first in any academic year by students who hope to receive the degree at the end of that academic year.

An application for admission to candidacy will be considered by the Graduate Board when the applicant has:

1. Completed two full academic years of graduate work (or its equivalent in part-time work), one of which must be at Clark University;
2. Passed the required examinations in foreign languages, or completed satisfactorily the substitute program;
3. Passed a preliminary examination in his chosen fields of study;
4. Obtained the written endorsement of his major department;
5. Paid the diploma fee (\$25) and publication fee (\$30).

Candidacy for the degree of Doctor of Philosophy holds good for three years from the date of admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. If candidacy expires without the degree having been awarded, the diploma fee and publication fee, less any expenses incurred, are returned.

Dissertation. A dissertation which is expected to make an original contribution to some special field of knowledge is required of each candidate.

The dissertation, approved by the chief instructor, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words in length, and a *précis*, not exceeding 75 words, both approved by the instructor under whom they were written, are also required.

Not later than four weeks before Commencement Day at which the degree is to be conferred the first, or ribbon, copy of the dissertation, together with two official title pages, an academic history page, the first copy of the abstract and of the *précis*, each in a form prescribed, must be delivered to the Registrar of the University. At the same time a second copy of the dissertation and of the abstract may be required by the major department. The title page, *précis*, and academic history forms are obtainable from the Registrar. The ribbon copy of the dissertation must be typed on prescribed paper, marginally ruled in black, obtainable at the college bookstore.

The Registrar deposits the dissertation and the abstract in the University Library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Incorporated, of Ann Arbor, Michigan, and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts*, which is widely distributed both in this country and abroad to subscribing libraries and leading abstracting services. The *précis* is printed in an annual publication by the University.

Final examination. The final examination is an oral and lasts for at least two hours; additional written examinations may be given if the major department so directs. The candidate is expected to defend his dissertation and at the discretion of the examining committee, may be questioned on the entire special field of his study. The oral examination is conducted by a committee of at least four members, including the chairman and one other member of the

major department, a member of the Graduate Board under whom the candidate has done no work (unless such a member has participated in the preliminary examination of the candidate), and such other members of the Graduate Board as may be duly appointed. The president of the University is authorized to invite any person from within or without the University to be present and to assist in the examination.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS, AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided by the University from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds and, in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Frequently, as in the case of departmental assistants, this employment yields useful experience.

Both outright grants and loans for educational purposes are provided in many sections of the United States by local foundations, fraternal organizations, civic groups, etc.

Graduate scholarships and fellowships are available for prospective candidates for all Master of Arts and Doctor of Philosophy degrees. Appointments are made on the basis of scholarly promise and seniority and on the recommendation of the departments. The number of appointments available in any department varies from year to year. Fellows and scholars are expected to coöperate with the staffs of the various departments, and may by mutual agreement undertake limited responsibilities. They are never called upon to perform services which would interfere with the completion of a full-time program of graduate study.

In a case where assistance in the department, either in research or teaching, is to be a duty of the fellow, an appointment may be designated as a research fellowship or a teaching assistantship. An appointment of this nature is made on the recommendation of the department and with the consent of the applicant.

Application for a scholarship or fellowship to begin in September should be made before March 1 to the chairman of the department in which the applicant expects to do his major work. Late applica-

tions are acted upon periodically. All applications, after endorsement by the department, go to the Graduate Board for final action.

According to an agreement between the members of the Association of American Universities, elections of fellows and scholars will be communicated on April first, but not before, to each successful candidate.

Stipends for graduate fellowships and scholarships are provided by the following funds:

THE GEORGE FRISBIE HOAR FUND, the gift of Andrew Carnegie in honor of the second president of the Board of Trustees.

THE AUSTIN S. GARVER FUND, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

THE CHARLES H. THURBER FUND, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the Board from 1919 to 1937.

THE GEORGE S. BARTON FUND, a bequest from the Honorable George S. Barton of Worcester. The income of this fund is for the benefit of native born citizens of the City of Worcester.

THE ALUMNI ASSOCIATION FUND, provided by alumni who hold the degree of Doctor of Philosophy, is for the benefit of students who are studying for that degree.

THE JOSEPH F. DONNELLY MEMORIAL FUND, a bequest from Lucretia F. Donnelly is to help men who are enrolled in a course leading to the degree of Doctor of Philosophy.

Teaching assistantships are available in certain departments. These involve a specified amount of instruction with stipends which vary according to the amount of service agreed upon.

Assistantships are available in several departments. These positions involve a variety of services with stipends to correspond, and usually provide the student with experience which will be useful in his later professional work.

Inquiries concerning any of the above types of appointment should be addressed to the chairman of the department concerned.

AID FOR GRADUATE STUDENTS

Student aid is available from the following funds, with the restrictions noted.

THE JOHN WHITE FIELD FUND established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow.

THE ELIZA D. DODGE FUND. The income of this fund is granted to graduate students of limited means who are engaged in research work.

THE CHESTER BLAND FUND. The income of this fund is preferably used to provide aid to a promising student, either in residence or engaged in research elsewhere under the direction of the department of History, Government and International Relations. It may also be used to defray the expense of visiting lecturers or of departmental research.

THE MORTON L. "SONNY" LAVINE FOUNDATION, a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History, Government and International Relations.

LOANS FOR GRADUATE STUDENTS

Loans are available for graduate students from the funds listed below. These loans bear interest at four per cent per year.

Applications for loans should be made at the office of the Treasurer.

THE MARY S. ROGERS SCHOLARSHIP AND LOAN FUND was established in 1926 for the benefit of students in the Graduate School.

THE SARAH M. THURBER LOAN FUND was established by the late Dr. Charles H. Thurber, former president of the Board of Trustees as a memorial to his mother.

The Graduate School of Geography

SAMUEL VAN VALKENBURG, PH.D., Professor; Director of Graduate School of Geography

RAYMOND E. MURPHY, PH.D., Professor; Editor of *Economic Geography*

RICHARD J. LOUGEE, PH.D., Professor of Geomorphology

HENRY J. WARMAN, PH.D., Professor; Secretary of Graduate School of Geography

GUY H. BURNHAM, A.M., Instructor; Cartographer

ERWIN RAISZ, PH.D., Visiting Professor; Cartographic Techniques

HANS CAROL, PH.D., University of Zürich, Visiting Professor

ROBERT L. ANSTEY, PH.D., Visiting Lecturer, Land Use

DAVID H. MILLER, PH.D., Visiting Lecturer, Hydrology

ROBERT C. ESTALL, London School of Economics, Visiting Lecturer in Economic Geography

RICHARD PRESTON, M.A., Teaching Assistant

SPECIAL LECTURERS, 1957-58

HAROLD H. McCARTY, PH.D., Iowa State University, Statistical Methods

GEORGE F. CARTER, PH.D., Johns Hopkins University, Asian Study

PAUL A. SIPLE, PH.D., U.S. Research and Development, Antarctic Research

GRADUATE WORK IN THE SCHOOL OF GEOGRAPHY

The Graduate School of Geography offers qualified students advanced training in geography. The map collection, libraries, and special laboratories for cartography provide unusual facilities for research work in residence. All graduate students are en-

couraged to undertake independent field studies as part of their university work.

The staff specialists must spend part of their time in travel and field studies. While in residence, they offer regular courses of instruction and direct advanced research work. Special lecturers, both American and foreign, supplement the regular Staff.

Please read the preceding section, "The Graduate School," for general requirements. For course offerings see the Geography section of "Departments and Courses."

The degree of Master of Arts

Candidates will pass written examinations in at least six of the following fields: physiography, climatology, soils, biogeography, land utilization, economic geography, human and cultural geography, regional geography, political geography, and urban geography. Oral examinations for the master's degree cover four fields approved by the Staff. The master's degree requires two years except for those whose preparation in fundamentals has been adequate to enable them to qualify in less time.

The degree of Doctor of Philosophy

Candidates are required to submit superior written examinations, and to pass a general oral examination covering six fields approved by the Staff. The oral examination is scheduled after language requirements are fulfilled. In general, a year of work beyond the master's degree should prepare candidates for the general examination preliminary to acceptance as candidates for the doctor's degree and to work on dissertations.

Theses and Dissertations

The master's thesis must be submitted to the major professor at least three weeks before it is to be deposited with the Registrar. Theses must rotate among and receive final approval of all staff members. Doctoral dissertations must be submitted at least four weeks before the completed copies are due at the office of the Registrar. Dissertations must be circulated first and then defended. Candidates submit the next-to-final drafts for staff circulation.

All dissertations are now reproduced in full on microfilm. Since maps and other graphic devices in color will not reproduce satis-

factorily, it is recommended strongly that such features be done in black and white for the master copies of dissertations.

DISTINCTIVE FEATURES

In addition to location in a natural setting rich in physical attributes worthy of investigation, the Clark University Graduate School of Geography is within easy access of such research centers as Harvard and Yale Universities, Boston cultural centers, and the American Geographical Society in New York.

The Clark Graduate School has become a traditional "port of call" for most professors of geography in this and other countries. Their stays may range from one hour to as long as six months or a year. Clark graduate students are privileged to visit with these leaders in the field of geography.

Graduate students are assigned desks and shelves in the Geography Workroom. Staff offices are located on the floor immediately above. Conferences are easily and frequently arranged. Both workroom and classroom have immediate connections with the periodical room and the open shelves of the library. The Libbey Library on the first floor serves for general conferences and seminars.

Each year the workroom group elects officers, who are responsible for the management of workroom activities. The officers also publish *The Monadnock*, which for thirty years has been circulated to the alumni of the Graduate School of Geography.

The professional magazine, *Economic Geography*, is edited by a staff member. Launched at Clark University over a quarter of a century ago, it is the only magazine published in English that specializes in the economic phases of geography.

An outstanding feature of the Graduate School of Geography is the field camp of three weeks' duration at the beginning of the fall term. Resident prospective candidates for graduate degrees in geography attend the field camp. The program includes studies in physiography, land utilization, urban geography and weather, with special training in mapping and other field techniques. Following return to campus, about ten days are allowed for the completion of field reports. Formal course work begins on the second Monday after the close of the field camp.

Formal course work in geography ends about May 1st, giving students free time in which to read and coordinate their work prior to the examination period.

SPECIALIZATION

There are certain basic courses that everyone takes, particularly in the master's program. However, the increasing complexity of world problems makes it impossible for anyone to become proficient in all phases of geography. In recognition of this, candidates for the doctor's degree are encouraged to specialize. The specialty depends upon the interests of the student.

STUDENTS' FEES

All geography students in residence pay, in addition to the general university fees, a camp fee, a workroom fee, and a classroom-materials fee.

The camp fee, determined on a cost basis, varies between \$50 and \$80. It is payable to the camp director on or before the first day of camp. It covers, in addition to camp tuition, board and lodging, transportation, maps, drafting supplies, and the use of meteorological instruments and other equipment.

The workroom fee, \$5 a semester, is payable to the department November first and March first. It helps to maintain the geography workroom and equipment used by graduate students—alcove desks, files of maps, card catalogue, adding machine, darkroom facilities, drafting tables and instruments.

The classroom fee, \$5 a semester, is payable to the department November first and March first. It is for mimeographing and for the maintenance, in part, of the classroom wall maps and other equipment.

THE SUMMER SCHOOL

The Summer School

ROGER C. VAN TASSEL, *Director*

The Clark University Summer School offers a unique opportunity for summer college study in Central Massachusetts. Intensive instruction in numerous fields is offered in the intimate and pleasant atmosphere of a small university.

During 1958 the three-week Intersession met from June 9 to 28 and the regular summer session from June 30 to August 15. A preliminary announcement of the 1959 Summer School program should be available about January 1, while the Summer School issue of the CLARK UNIVERSITY BULLETIN is published shortly thereafter.

The Summer School in 1955 was revised to offer a larger variety of courses to undergraduates, graduate students and teachers alike, and to permit students to obtain a larger number of academic credits. The Intersession, a three week period of concentrated study, and the Summer Session permit the student to take three semester courses (9 semester hours of credit). Evening courses are scheduled permitting students to continue their education during the summer while engaged in day-time employment.

To broaden his intellectual horizons the student is also encouraged to engage in informal afternoon seminars, special evening lectures, conferences, to take week-end excursions to famous New England cultural centers and to participate in the various social events.

DEGREES AND CREDITS

All courses offered are accepted at Clark for credit toward baccalaureate degrees, unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the chairman of the department concerned.

Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages, which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration.

COURSES OFFERED

The following courses were offered in 1958 and are listed here as a typical example of the programs of study available at the Intersession and Summer Session:

BIOLOGY

- S. 17 General Ecology
- S. 130 Microbiology
- S. 221 Embryology
- S. 244 Biochemistry
- S. 370 Research in Biology

BUSINESS ADMINISTRATION

- S. 16 Business Statistics
- S. 17 Public Speaking
- S. 109 Sales Management
- S. 125b Retailing Principles
- S. 131 Human Relations and Policy Making in Business and Industry
- S. 170 Management of Small Business
- S. 181a Industrial Management
- S. 183a Management-Labor Relations

ECONOMICS

- S. 13 Money and Banking
- S. 211b Comparative Economic Systems
- S. 28 Research in Economic Problems

EDUCATION

- S. 20 Geography in Education
- S. 201b Educational Psychology
- S. 225 A Demonstration in Methods and Materials in Teaching
- S. 228 Guidance and Evaluation
- S. 209b Philosophy of Education

ENGLISH

- S. 11a English Composition and Literature
- S. 12 Public Speaking
- S. 103 The Comic Spirit in English and American Literature
- S. 106 Contemporary American Fiction
- S. 111 Survey of American Literature (Since 1865)
- S. 126 Modern American and British Drama

FINE ARTS

- S. 13a Twentieth Century Music
- S. 122 An Introduction to Symphonic Music

GENERAL EDUCATION

- S. 144 Introduction to Western Civilization

GEOGRAPHY

- S. 10a Principles of Geography
- S. 20 Geography in Education
- S. 30 Seminar on Geography in Social Studies
- S. 191 Cartography
- S. 201b Problem Areas in the World: A Political Geographic Evaluation
- S. 285a Geography of Europe
- S. 291 Cartography
- S. 300 Research in Geography

HISTORY AND GOVERNMENT

- S. 130a Political History of the United States
- S. 25a Comparative Government
- S. 213 European Diplomatic History, 1848-1918
- S. 231 American Colonial History
- S. 233 The West in American History
- S. 237 Economic History of the United States since 1815
- S. 238 New Viewpoints in American History
- S. 300 Reading and Research in History and Government

LANGUAGE (Double Courses)

- S. 12 Intermediate French
- S. 14 Readings in French Literature
- S. 11 Introductory German
- S. 12 Intermediate German
- S. 11 Introductory Spanish
- S. 12 Intermediate Spanish

MATHEMATICS

- S. 11 Freshman Mathematics

PHILOSOPHY

- S. 116 Readings in Existentialism
- S. 121 Classical American Philosophers
- S. 290b Philosophy of Education

PSYCHOLOGY

- S. 11a General Psychology
- S. 103b The Abnormal Personality
- S. 172a Personality Development
- S. 190 Industrial Psychology
- S. 350 Research in Psychology

SOCIOLOGY

- S. 16 Social Problems
- S. 131 Human Relations and Policy Making in Business and Industry

THE EVENING COLLEGE

The Evening College

THOMAS J. DOLPHIN, *Director*

GENERAL INFORMATION

The Evening College, established in 1953 as an institution devoted to adult learning, has three primary functions. With the conviction that education in our modern society must be a life-long process, it provides university education for adults of all ages who seek further knowledge and personal development through selected studies in the broad areas of the liberal arts. Further, in recognition of the rapidly developing and changing needs of business and the professions, it provides courses designed to help working men and women improve their occupational skills and to prepare for positions of increased responsibility.

Secondly, the Evening College provides an opportunity for adults to earn the bachelor's degree, exclusively by evening study, through programs planned to meet the unique educational needs of the mature person. Formal programs are available leading to the Bachelor of Science degree in either General Studies or Business Administration. The Evening College also offers the Diploma in General Studies, a short formal program in liberal education designed specifically for adults.

Finally, as a community service, the Evening College organizes frequent non-credit short courses, institutes and seminars tailored to the specific needs of various civic, professional and business groups. Information regarding such services should be addressed to the Director.

ADMISSION TO INDIVIDUAL COURSES

In general, admission to individual courses in the Evening College is open to all interested adults seeking to further their education. High school graduation, though not required, is desirable. Continued attendance is contingent upon evidence of ability to profit from the instruction offered. Advanced courses for which prerequisite courses or experience are indicated are open only to persons who meet the stated requirements.

DETAILED INFORMATION

Detailed information about the Evening College is contained in the special catalogue available from the Director, The Evening College, Clark University, Worcester 10, Mass. Catalogues are issued in advance of registration for the Fall and Spring semesters.

ADMISSION TO FORMAL PROGRAMS OF STUDY

Adults applying for a formal program of study in the Evening College for the first time after September, 1957 will be required to submit records of their previous schooling prior to admission. Except under unusual circumstances applicants must possess a diploma from an accredited high school. Applicants for the Bachelor of Science degree or the Diploma in General Studies who have not attended college previously may arrange to have their high school records forwarded directly to the Evening College on forms which will be supplied upon request by the College. Adults who have attended other colleges should request that official transcripts be forwarded directly to the Evening College of Clark University, 950 Main Street, Worcester 10, Massachusetts.

DEPARTMENTS AND COURSES

Interdepartmental Majors
General Education
Biology
Business Administration
Chemistry
Classics
Economics and Sociology
Education
English
Fine Arts and Music
Freshman Orientation
Geography
Geology
German
History, Government, and International
Relations
Mathematics
Philosophy
Physics
Psychology
Romance Languages





DEPARTMENTS AND COURSES

Departments and important subdivisions of departments and certain interdepartmental groups of courses are listed in the following pages. Interdepartmental Majors and General Education are listed first. Departments follow the first two entries in alphabetical order. Departmental announcements contain important general information, as well as regulations concerning graduate work and statements of the requirements for undergraduate majors.

The announced courses of instruction are subject to any modification which may become necessary.

COURSE NUMBERING SYSTEM

A number, unmodified by "a" or "b", represents a year course continuing through the two semesters of an academic year. A number followed by an "a" means: half course, first semester; a number followed by a "b" means: half course, second semester.

A two-semester course is divisible unless an explicit statement of indivisibility appears in the course description. Those courses noted as "indivisible" require the successful completion of the first semester as a prerequisite to entering the second semester, and no credit is granted unless both semesters are satisfactorily completed.

Courses are, in general, arranged in sequence so as to progress from the elementary to the advanced. In those departments which offer work at the graduate level, courses are classified under three headings as follows:

PRIMARYLY FOR UNDERGRADUATES, designated by numbers beginning with the figure "1."

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS, designated by numbers beginning with the figure "2." Open to juniors and seniors with the consent of the instructor.

PRIMARYLY FOR GRADUATE STUDENTS, designated by numbers beginning with the figure "3."

In the departments offering only undergraduate work, course numbers begin with the figure "1." Business Administration, an exception to the rule, has some course numbers beginning with the figure "2."

Interdepartmental Majors

The Faculty has authorized "interdepartmental majors" in order to provide a broader study of certain fields than can be fitted into any departmental program, while yet preserving the unity of subject essential to a major.

An interdepartmental major includes eight or more required courses.

At present two programs are offered under this plan. These are:

I. INTERNATIONAL RELATIONS

Freshman and Sophomore Years

General Educ. 14
Economics 11
Geography 10
Government 14

Europe and the United States since 1500
Principles of Economics
Principles of Geography
International Relations

Junior and Senior Years

Government 240
Government 241
Geography 201
Economics 207
Economics

Seminar in International Relations
International Law and Organization
Political Geography
International Economics
One-half course to be selected

Instructor in charge: Mr. Hayden

II. AMERICAN CIVILIZATION

Freshman Year

General Educ. 14

Europe and the United States since 1500

Sophomore Year

At least two of the following courses:

Government 15
Economics 11
Sociology 11

Introduction to Government
Principles of Economics
Principles of Sociology

Junior and Senior Years

History 230
English 111
History 23b

Social and Intellectual History of the United States
A Survey of American Literature
Senior Conference in American Civilization

Two courses chosen from the following list:

Government 251a
Government 254b
History 234a
History 235a
History 236a
Philosophy 12
Sociology 15a
Sociology 29b

American Political Parties
American Constitutional Law
American Diplomatic History
The United States in the Twentieth Century
American Political History 1828-1877
History of Philosophy
Social Institutions
Advanced Sociological Theory

Alternative courses may be chosen with the approval of the instructor in charge of the program.

Instructor in charge: Mr. Grob.

General Education

Courses in General Education are distinguished from courses which are listed in departmental announcements by point of view and breadth of approach rather than by content. They offer the student an opportunity to obtain a core of information and of ideas which will be possessed in common with many of his contemporaries and to stimulate intelligent and critical interest in fields of culture where he has no expectation of attaining professional competence. General Education courses are thus a valuable supplement to the major program. They are outside the sequence of courses in a student's "major" or "field of special interest" and are generally without specific prerequisites.

The following courses are classified for administrative purposes in Group A or Group B or Group C. They may be used to meet college requirements wherever a particular Group is specified in the "Freshman Programs" or in the "Requirements for a Bachelor's Degree."

The offerings in General Education are under the supervision of a committee which reports to the Academic Council. The present committee consists of Mr. Bumer, chairman, Mr. Nunne-macher and Mr. Reid.

Courses in General Education

10. **An Introduction to Physical Science.**

This course covers fundamental and outstanding developments of both classical and modern physics and includes selected topics from chemistry and astronomy. The methods and procedures of science as exemplified by physics are emphasized, and considerable attention is given to historical background and the effect of science on man's thought and life. The laboratory periods are devoted to demonstration, discussion, criticism and evaluation, and to a series of selected experiments which are carried out by the students. No attempt is made to develop special competence in laboratory techniques. Open to freshmen. Primarily for non-science majors. Classified as a Group A course. MR. ROOPE

14. **Europe and the United States Since 1500.**

Political, economic and intellectual trends since the Renaissance. The first semester treats the sixteenth, seventeenth, and eighteenth centuries; the second semester, the nineteenth and twentieth centuries.

A class fee of one dollar for each member of the class is charged for supplies and duplicate library copies of books. Open to freshmen. Classified as a Group B course. First semester: MR. LEE assisted by MR. SCHALK; Second semester: MR. LEE and MR. GROB assisted by MR. SCHALK.

17. **Great English and American Writers.**

The aim of this course is not to present a survey of English and American literature, but to study in some detail a limited number of outstanding works of English and American literature—usually six or seven each semester. These works are chosen not only because they possess literary merit but also because they embody significant concepts or issues; and the relevance of the works both to the past and to the present is explored and evaluated.

Four members of the English Department share in the teaching of the course, each man being responsible for one semester; each instructor focuses on one basic idea or issue, so that the student will be able to examine this concept in some detail, trace its growth and development in six or seven

writers, and make meaningful and constructive comparisons and contrasts.

The course is set up in two forms, each form being offered in alternate years:

Form A

The Shapers of English Literary Tradition

First Semester

MR. HASTINGS

The Concept of Individualism in 19th
and 20th Century English and

American Literature

Second Semester

MR. ANDERSON

Form B

Shapers of American culture

First Semester

MR. BEARD

The Concept of the Hero

Second Semester

MR. LETENDRE

Any semester of this course meets requirements for a third semester of English in addition to English 11. Open to sophomores, juniors, and seniors, who are not majoring in English.

18. Literature and the Nature of Man. [Not offered 1958-59]

This course is designed to serve the general student by providing him with an opportunity to investigate ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representative of the cultures of which they are products.

The course is planned not only to introduce the student to a body of knowledge and experience held in common by educated men and women in our society, but also to help him to clarify his thinking concerning certain basic problems and to develop attitudes that are both humane and creative.

The subject matter undertaken includes Sophocles' *Oedipus the King*, the *Book of Job*, the *Inferno* from Dante's *Divine Comedy*, Shakespeare's *King Lear*, Milton's *Paradise Lost*, Moliere's *Misanthrope*, Goethe's *Faust*, Part I, and selected poems of T. S. Eliot. All non-English works are read in translation.

Meets the requirement for a third semester of English in addition to English 11, but not the requirement in Fine Arts. Classified as a Group C course. Open to sophomores, juniors, and seniors with the consent of the instructors. Successful completion of first semester is normally required for admission to second semester. MR. ANDERSON AND MR. KING

110. Fundamental Concepts of Mathematics.

The subject matter of this course is exposed in terms comprehensible to students with no formal training in mathematics at the college level. It is hoped that the course will show the student how the abstract and general ideas of mathematics have implications for other fields of learning. Indivisible course. Open to juniors and seniors only. Classified as a Group A course. MR. GORENSTEIN

115. Man and Language.

An introduction to the analysis of the nature and function of human language: its role in the life of individuals and societies. What is language? What is the relation between language and thought? Does our language partially determine how we perceive the world? Why do languages change, and how? Is communication the primary function of language? How does language bind social groups together? How are the world's languages related to each other? Why don't we have a world language?

The course is designed (1) for the general student who wishes to know more about the nature of the uniquely and universally human institution of language; (2) for the student of such fields as psychology, sociology, anthropology and philosophy who wishes to explore the importance of language to his own field; and (3) for the student or teacher of English or foreign languages who is interested in the light which linguistic science can give upon the relations between his field and other areas of life and knowledge. MR. REID

143. The Theater in Western Civilization. [Not offered 1958-59]

The Theater as an art form as it is developed by specific cultural periods of the civilization of the West. Open to upperclassmen with the consent of the instructor. This course does not meet the requirement of a third semester of English, nor the requirement in Fine Arts. Classified as a Group C course. MR. EDWARDS

American Civilization

An "interdepartmental major" in the field of American Civilization is offered to candidates for the degree of Bachelor of Arts. The program required for the completion of this major is fully outlined under the heading *Interdepartmental Majors*.

Department of Biology

PROFESSOR POTTER, PROFESSOR NUNNEMACHER,

ASSISTANT PROFESSOR REYNOLDS, ASSISTANT PROFESSOR CAMOUGIS,*

ASSISTANT PROFESSOR LOOSLI, RESEARCH ASSOCIATE GATES

The biological laboratories are well equipped for the courses offered and contain special equipment for advanced investigations. Funds are available annually for the purchase and building of apparatus which may be required. The University Library contains complete files of the more important periodicals and reference works. The department maintains an extensive herbarium.

UNDERGRADUATE WORK

Biology 11 presents a comprehensive view which is prerequisite to all other courses in the department.

An undergraduate majoring in biology must complete Biology 11 and three advanced courses in biology, Chemistry 11, Physics 11, Mathematics 11, and at least one additional course in chemistry, physics or geology. Mathematics 11 does not count towards the fulfillment of the major requirements.

A candidate for honors in biology must take Biology 11, 12, 14 and 240.

THE PRE-MEDICAL PROGRAM

Clark University is justly proud of its pre-medical training program. Not only do our better students have little difficulty in entering the best medical schools, but they usually rank in the

* Appointed 1958.

upper half of their medical school classes and become respected and outstanding physicians.

The student entering upon the pre-medical program must be prepared to compete with other college students of above-average ability; he must be of good health and capable of sustained hard work; he must like and get along well with all kinds of people and he must have a real desire to help the sick and advance the science of medicine. The pre-medical student must be prepared to undertake a program of intensive study which usually takes eight years before the medical degree can be obtained. During this time the large amount of class and laboratory work reduces considerably the opportunities for earning money through outside work.

While the requirements for the Bachelor of Arts degree assure each graduate familiarity with several fields of learning, the pre-medical student should take as many non-science courses as possible to round out his general education, because medical school programs leave no time for courses outside of their technical field. Courses in psychology and human relations will be of particular benefit.

The field of medicine is open equally to men and women.

The following programs are recommended for pre-medical students with a major in biology. Program A places the emphasis on biology; Program B places the emphasis on chemistry.

PROGRAM A

First Year

English
Foreign Language
Mathematics
General Biology
Group B (one course)

Third Year

Biology (two advanced courses)
Chemistry 13
Physics 11
Two electives

Second Year

Biology 12
General Chemistry
Foreign Language
Group B (one course)
 $\frac{1}{2}$ course in English and
 $\frac{1}{2}$ course in Fine Arts

Fourth Year

Biology 240
Chemistry 17 and 170
Three electives

PROGRAM B

First Year

English
Foreign Language
Mathematics
General Chemistry
Group B (one course)

Second Year

Chemistry 13
General Biology
Foreign Language
Mathematics 12

Third Year

Chemistry 17 and 170
Biology 12
Physics 11
Group B (one course)
One elective

Fourth Year

Chemistry 19
Biology (two advanced courses)
 $\frac{1}{2}$ course in English and
 $\frac{1}{2}$ course in Fine Arts
One elective

GRADUATE WORK

Graduate instruction has been offered by the Biology Department since the founding of the University in 1887. At present a small number of students may work towards the Master of Arts Degree in specialized phases of Botany, Zoology, Physiology and Bacteriology. The department stresses a firm foundation in general biology and allied fields and the development of the critical judgment and work habits so necessary in teaching and independent research.

Admission as a candidate for an advanced degree in the department presupposes adequate preparation in the basic sciences, an over-all undergraduate academic record of B or better and satisfactory standing in the graduate record examination. The program usually requires two full academic years and involves the completion of five full graduate courses and an acceptable thesis.

Graduate assistantships and scholarships are available in limited numbers.

Courses in Biology

During the academic year 1957-58 the following courses were given:* 11, 12b, 14, 18a, 202b, 215a, 220b, 230, 240, 247a, 248b, 320, 330, 340, 350, 360.

PRIMARILY FOR UNDERGRADUATES

11. General Biology.

The fundamental principles and problems of biology. One laboratory period per week. Divisible course upon approval by the department. Open to freshmen.

MR. POTTER AND MR. NUNNEMACHER

12. Comparative Anatomy.

The morphology of the vertebrates from a comparative standpoint which traces the evolution of animals from fish to mammals. Two lectures and two laboratory periods per week.

MR. NUNNEMACHER

14. Botany.

First semester, morphology, and taxonomy of the lower plants. Special emphasis is given to the algae and fungi. Second semester, systematic botany of the higher plants with emphasis on our local flora. A collection of one hundred plants is required, also a spring program of laboratory work in the field of at least three days' duration. Either semester of the course may be elected separately. Prerequisite: Biology 11, first semester.

MR. POTTER

17b. General Ecology.

An introductory study of the distribution of plants and animals, their inter-relationships and adaptations to such a wide variety of environments as the seashore, sand dunes, woodlands, and ponds. Field trips to Mt. Monadnock and other areas of ecological interest will be taken during the laboratory period or on Saturday. Three lectures, one laboratory per week. Usually offered in the summer.

MR. POTTER AND MR. NUNNEMACHER

18a. Genetics.

An introduction to the principles of genetics.

MR. POTTER

* Course 215a given as 15a in 1957-58.

Courses 240, 247a, 248b, 340 given by Mr. Loosli in 1957-58.

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

201. **Advanced Systematic Botany.**
Three laboratory periods and one lecture per week. Either semester may be taken separately. MR. POTTER
- 202b. **Economic Botany.** MR. POTTER
213. **Seminar in General Biology.** STAFF
- 215a. **Invertebrate Zoology.** MR. REYNOLDS
- 219b. **Entomology.**
Fundamentals of insect life. Three lectures and one laboratory period per week. MR. POTTER
- 220a. **Histology**
A comprehensive course dealing with tissue structure. Emphasis is placed on the study of mammalian tissues. Two lectures and two laboratory periods per week. MR. NUNNEMACHER
- 221b. **Embryology.**
A consideration of the fundamentals of vertebrate embryology. Two lectures and two laboratory periods per week. MR. NUNNEMACHER
- 223b. **Parasitology.**
An introduction to the parasitic mode of life of the protozoa, helminthes, and arthropoda and their relation to mankind. MR. REYNOLDS
- 224b. **Neuro-anatomy.**
Three lectures per week. MR. NUNNEMACHER
230. **Bacteriology.**
An introduction to the study of bacteriology. 230a is a prerequisite for other courses in bacteriology. One lecture and two laboratory periods per week.
231. **Advanced Bacteriology.**
The first semester deals with the cytology and physiology of the eubacteria and certain higher forms. The second semester covers bacteriological and serological procedures used in the study of pathogenic bacteria. Open to students who satisfy the instructor as to their preparation. Two lectures and two laboratory periods per week. MR. REYNOLDS

240. General Physiology.

The principal types of functioning characteristic of living organisms are considered in the light of their physio-chemical determinants. Open to students who satisfy the instructor as to their preparation. Two lectures and two laboratory periods per week.

MR. CAMOUGIS

241a. Endocrinology.

A study of the ductless glands and their relation to behavior. Three lectures per week.

MR. CAMOUGIS

244a. Biochemistry.

[Not offered 1958-59]

246b. Physiological Genetics.

[Not offered 1958-59]

The mechanisms for the genetic control of physiological processes.

MR. CAMOUGIS

247a. Plant Physiology.

[Not offered 1958-59]

MR. LOOSLI

248b. Insect Physiology.

[Not offered 1958-59]

MR. LOOSLI

249b. Neuro-physiology.

Three lectures and one laboratory period per week.

MR. CAMOUGIS

260. Special Problems.

Advanced semi-independent study of an approved topic under the direction of a member of the staff. Hours and credit to be arranged.

STAFF

261. Microtechnique.

MR. NUNNEMACHER AND MR. POTTER

PRIMARILY FOR GRADUATE STUDENTS

300. Readings and Research in Botany.

MR. POTTER

301b. Plant Morphology.

MR. POTTER

320. Readings and Research in Zoology.

MR. NUNNEMACHER

330. Readings and Research in Bacteriology.

MR. REYNOLDS

340. Readings and Research in Physiology.

MR. CAMOUGIS

350. Advanced Studies in Biology. Seminar.

STAFF

360. Thesis.

STAFF

Business Administration

PROFESSOR MELDER, ASSOCIATE PROFESSOR HARGEST, ASSOCIATE
PROFESSOR NICHOLSON, ASSISTANT PROFESSOR BALKO, ASSISTANT
PROFESSOR LEVENSON, LECTURER BREEN.

The Division of Business Administration

GEORGE E. HARGEST, *Acting Director*

ADVISORY COMMITTEE

NATHAN T. BASCOM, President, Worcester Mechanics Savings Bank
JOHN W. COGHLIN, President, Coghlin Electric Company
EVERETT W. HICKS, Vice President, Norton Company
FREDERICK W. HOWE, President, Crompton and Knowles Loom
Works
H. LADD PLUMLEY, President, State Mutual Life Assurance Com-
pany of America
RICHARD C. STEELE, Business Manager, Worcester Telegram Pub-
lishing Company
PARKER TROWBRIDGE, Resident Manager, Paine, Webber, Jackson
and Curtis

GENERAL STATEMENT

The Division of Business Administration presents and supervises a four year course of study leading to the degree of Bachelor of Science in Business Administration. The "core curriculum" is given cooperatively by the departments of Economics and Sociology, English, History, Government and International Relations, Mathematics, and the Natural and Physical Sciences.

General supervision of the program rests with the Administrative Committee representing the faculty. An advisory committee listed above assists in the formation of general policies.

A statement of the requirements for the degree of Bachelor of Science in Business Administration is found under the heading "Requirements for the Bachelor's Degree."

Students should note that the following Business Administration courses may not be counted for credit toward the degree of

Bachelor of Arts: 104a, 152b, 154b, 156b, 172a, 174b, 176a, 202, 204b, 206, 253b, 254a, 274b.

Requirements for admission and the freshman program are covered in the general sections "Admission Information" and "Student Programs".

Transfer students. Students entering from junior colleges and other institutions with advanced standing will be expected to meet the same requirements as entering freshmen, and their records will be individually evaluated to determine the amount of credit to be allowed for work in these institutions.

The following regulations affecting transfer students are now in force:

(1) "Business English" and "Business Mathematics" are not acceptable for credit toward the degree.

(2) The college reserves the right to examine a student in any course required for the degree which is offered for transfer credit.

(3) A maximum of two courses (12 semester hours) in one field may be accepted for transfer credit without further confirmation. More than two courses will not be accepted for transfer credit until a confirming course, at a higher level, has been completed at Clark University with a grade of C— or better.

(4) In no case will transfer credit be allowed for more than four courses (24 semester hours) in any one field.

(5) In any subject in which a full year course (6 semester hours) is required at Clark, the University may deny the transfer of credit for a half-year course in that subject.

(6) A day or days early in September will be set for all required examinations for transfer students, the students to be notified well in advance.

(7) When a transcript has been evaluated for transfer credit and the evaluation has been accepted by the student concerned, no further revision of the amount of credit will be considered. The evaluation and acceptance shall be considered a contract between the University and the student.

THE BUSINESS ADMINISTRATION PROGRAM

Business today seeks its young recruits among those who give promise of being able to qualify for places of responsibility in management. While business still demands those who have com-

mand of certain technical skills, its broader outlook dictates that they shall also have a sound cultural education as well as training in the basic fundamentals of business.

The program leading to the Bachelor of Science degree in Business Administration is designed to provide fundamental skills in business as well as broad professional training. Breadth is assured by prescribing required courses in the basic "tool" subjects and in selected functional areas of business activity. Professional and technical specialization is assured by requiring the student to select one of the areas for concentration. Overspecialization, however, is prevented by limiting the extent of this concentration. The opportunity for cultural enhancement is available to the student by allowing him freely to elect part of his program among courses in the Arts and Sciences.

THE AREA OF CONCENTRATION

At the beginning of his sophomore year, the student is required to elect the area of concentration in which he is to specialize. Below are listed course programs for each of the areas presently available. The student is required to present at least four and no more than five courses in the elected area of concentration before he may graduate. For this purpose, no more than two half-courses with a grade of less than C— are acceptable.

Accounting

BA	100	Principles of Accounting
BA	102	Intermediate Accounting
BA	104a	Federal Tax Accounting
BA	202	Cost Accounting
BA	204b	Auditing
BA	206	Advanced Accounting

Economics

Economics	11	Principles of Economics
Economics	13a	Money and Banking
Economics	13b	Problems in Money and Banking
Economics	21a	Business Cycles
Economics	21b	National Income Analysis
Economics	22	Labor Economics
Economics	205a	Intermediate Economic Theory
Economics	207	International Economic Policy
BA	120a	Corporation Finance

Finance

Economics	11	Principles of Economics
Economics	13a	Money and Banking
Economics	13b	Problems in Money and Banking
Economics	15a	Public Finance
Economics	21a	Business Cycles
Economics	21b	National Income Analysis
Economics	25b	Fiscal Policy
Economics	26	Industrial Organization and Government Control
BA	120a	Corporation Finance
BA	121b	Investments

Marketing

BA	150a	Principles of Marketing
BA	152b	Advertising
BA	154b	Retailing
BA	156b	Wholesaling
BA	252a	Marketing Research
BA	253b	Sales Forecasting
BA	254a	Sales Management
BA	255b	Marketing Policies
Ec	140b	Consumer Economics

Management

BA	170b	Principles of Management
BA	172a	Industrial Management
BA	174b	Supervision
BA	176a	Production Control
BA	272	Management Policies
BA	274b	Case Studies in Management
BA	290	Analysis of Business Problems

Personnel Administration

BA	170b	Principles of Management
BA	172a	Industrial Management
BA	174b	Supervision
BA	182a	Personnel Management
BA	184	Labor Relations
BA	285b	Human Relations in Industry
Ec	22	Labor Economics

THE BACHELOR OF BUSINESS ADMINISTRATION DEGREE

The Bachelor of Business Administration degree will be granted in June 1959 and June 1960, and possibly to some students in June 1961. Thereafter, only the Bachelor of Science in Business Administration degree will be conferred.

The requirements for the degree of Bachelor of Business Administration are as follows:

Required courses:

BA 100, BA 120a, BA 140, BA 150a, BA 160, BA 172a, BA 290, Econ. 11, Econ. 13a, Mathematics 11, English 11, English 12a, Government 15.

In addition to the above required courses the student should present 5 additional courses in Business Administration or in closely related subjects.

Courses in Business Administration

During the academic year 1957-58 the following courses were given: 10a, 10b, 13a, 16, 17a, 18a, 19b, 112b, 115a, 117, 127, 128, 181a, 182b, 183, 20, 203b, 209b, 230a, 250.

Business Administration courses have been renumbered. The following table relates the current course numbers to former course numbers.

Current course number:	100	102	104a	140	150a	152	154b	160	172a	174b
Former course number:	117	127	129a	20	10b	115a	125b	16	181a	182b
Current course number:	176a	182a	184	202	204b	206	252a	253b	254a	
Former course number:	13a	112a	183	128	227b	237	203a	203b	109b	
Current course number:	255b	272	290							
Former course number:	230a	209b	250							

ACCOUNTING

100. Principles of Accounting.

The organization and use of financial records, with emphasis on interpretation as well as on techniques of procedure. Required of all candidates for the degree of B.S. in B.A. Indivisible course.

MR. HARGEST

102. Intermediate Accounting.

Generally accepted accounting principles and procedures and their application to asset, liability and proprietorship accounts. The analysis of financial statements, including statements from incomplete data and the statement of application

of funds. Emphasis is placed upon problem analysis and solution. Prerequisite: B.A. 100. Indivisible course.

MR. HARGEST

104a. Federal Tax Accounting.

The legal and accounting fundamentals of federal income and social security taxes with major emphasis upon the preparation of returns. Prerequisite: B.A. 100.

202. Cost Accounting.

[Not offered 1958-59]

Basic principles of cost accounting are related to job order, process, estimated and standard cost systems. Costs for profit determination and for managerial control and decision making are considered. Prerequisite: B.A. 102 or the consent of instructor.

MR. HARGEST

204b. Auditing.

After an analysis of the purpose and scope of the several classes of audits, the course deals with (1) professional ethics (2) auditing standards (3) internal control systems (4) audit procedures applicable to asset, liability and proprietorship accounts (5) the use of worksheets and the preparation of statements and reports. Prerequisite: B.A. 102.

206. Advanced Accounting.

The theory and practice of accounting for branches, mergers, receiverships, estates and trusts, consolidated statements, budgets, municipal accounts, and other topics of an advanced nature. Prerequisite: B.A. 102.

MR. HARGEST

ECONOMICS AND FINANCE

See the announcement of the Department of Economics and Sociology for descriptions of Economics courses.

Economics 11. Principles of Economics.

Required for the degree of B.S. in B.A.

Economics 13a. Money and Banking.

Required for the degree of B.S. in B.A.

Economics 13b. Problems in Money and Banking.

Economics 15a. Public Finance.

Economics 140b. Consumer Economics.

Economics 21b. National Income Analysis.

Economics 22. Labor Economics and Labor Problems.

Economics 24b. History of Economic Doctrine.

Economics 25b. Problems in Public Finance.

Economics 26. Industrial Organization and Governmental Control.

Economics 29a. Economics of Transportation.

Economics 205a. Intermediate Economic Theory.

Economics 207. International Economics.

Economics 211b. Comparative Economic Systems.

Economics 231b. Economic History of the United States.

120a. Corporation Finance.

The financial structure of modern industry with emphasis on the nature of the business corporation, its financial practices, types of securities, capital structure, financial reorganization, and the problems of internal financial control. Prerequisite: Economics 11. Required of all candidates for the degree of B.S. in B.A.

MR. NICHOLSON

121b. Introduction to Investments.

Principles underlying investment analysis and policy; salient characteristics of governmental and corporate securities; policies of investment companies and investing institutions, relation of investment policy to money markets and business fluctuations; security price-making forces; construction of personal investment program and exchange operation. Prerequisite: B.A. 120a.

MR. NICHOLSON

LAW

140. Business Law.

The legal basis of business and the principles of statutory and common law as they affect business relationships; covering such subjects as contracts, property, sales, negotiable instruments and agency. Required of all candidates for the degree of B.S. in B.A. Indivisible course.

MR. BREEN

MANAGEMENT AND PERSONNEL ADMINISTRATION

170b. Principles of Management.

The principles disclosed through a study of planning, organizing, directing, assembling resources, and controlling which apply equally to all fields of administration. Required of all candidates for the degree of B.S. in B.A.

MR. LEVENSON

172a. Industrial Management.

A survey of the techniques of the executive control of manufacturing operations with special reference to such fields as specialization of labor, expansion, control of factors of production, and internal organization.

174b. Principles of Supervision.

The problems faced by business executives in the procuring, training, and developing of first-line supervisors and middle-management. Emphasis is placed on such areas as communications, motivation, morale, grievances, etc. The case method of study will be utilized.

MR. LEVENSON

176a. Production Control.

The inter-relationship of production control with other control techniques. Topics to be discussed include production, forecasting, development and analysis, budgeting, scheduling, quality control, and coordination. The case study method will be employed. Prerequisite: B.A. 170b.

MR. LEVENSON

182a. Introduction to Personnel Management.

Emphasis is placed on integrating personnel management with the other areas of management. Representative topics studied include procuring, developing, maintaining and using an effective work force; communications; morale; and labor-management relations. Prerequisite: B.A. 170b.

MR. LEVENSON

184. Management-Labor Relations.

The subject matter of the course is management-employee relationships with special reference to union and management bargaining. Opportunity for development of perspective and judgment as regards problems of management in shop industrial situations and under the law of labor relations is provided. Discussion and case methods are employed. Prerequisite: Economics 11.

MR. MELDER

272. Management Policies.

[Not offered 1958-59]

Actual problems of representative business concerns based on specific case studies: administrative coordination, business research, business policies, development of master plans and operating budgets, measurement of administrative effectiveness. Prerequisite: B.A. 172a. Indivisible course.

MR. LEVENSON

274b. Case Studies in Industrial Management.

A case study approach to practices of administration to help develop a more realistic understanding of sound industrial management principles. Techniques of analyzing and formal report writing.

MR. LEVENSON

285b. Human Relations in Industry.**290. Analysis of Business Problems.**

The course is designed to integrate the principles covered in more specialized courses in Business Administration in order to bring business as a whole and its economic problems into perspective. Required of all seniors in the Business Administration program. Indivisible course.

MR. BALKO

MARKETING

150a. Principles of Marketing.

The efficiency, social implications, and public control of the activities and practices of business institutions in effecting a flow of tangible commodities between producer and consumer. Required of all candidates for the degree of B.S. in B.A.

MR. BALKO

152b. Advertising.

[Not offered 1958-59]

Advertising as a tool of marketing. Topics studied include the economic functions of advertising, advertising research, media selection, advertising organizations, and testing.

MR. BALKO

154b. Retailing Principles.

The retailer in our economy, the store and its organization, aspects of buying and selling, operating activities and personnel, and retail control.

MR. BALKO

156b. Wholesaling.

[Not offered 1958-59]

Marketing tangible goods other than sales to ultimate consumers. Economics of wholesaling; types of wholesalers, agents and brokers; operation and management of a wholesale business; industrial marketing and purchasing.

252a. Marketing Research.

Problems faced by business executives in marketing and the ways in which methods of scientific business research can be utilized for their solution. Prerequisites: Economics 11 and B.A. 160, or equivalent.

MR. BALKO

253b. Sales Forecasting.

Application of statistical procedure to the problems of predicting market demand and sales of the individual firm. Prerequisites: Economics 11 and B.A. 160, or equivalent.

MR. BALKO

254a. Sales Management.

[Not offered 1958-59]

The organization and direction of the efforts of a sales force. This involves establishing a sales plan; placing the sales department in the company organization; formulating sales policies; organizing the sales department; recruiting, training, equipping, motivating and compensating salesmen; and measuring their performance. Prerequisites: B.A. 150a and B.A. 170b, or equivalent.

MR. BALKO

255b. Marketing Policies.

[Not offered 1958-59]

An analysis of how such forces as competition, demand, cost, distribution structure, and legislation affect marketing decisions of the individual company in regard to products, brands, channels of distribution, selling, advertising, sales promotion, and prices. Prerequisites: Economics 11 and B.A. 150a, or equivalent.

MR. BALKO

STATISTICS

160. Business Statistics.

Statistical methods and techniques applied to data drawn from the business community. The course includes sampling, statistical inference, estimation and decision making; correlation—linear, multiple and curvilinear; analysis of time series and index numbers. Prerequisite: Mathematics 11. Required of all candidates for the degree of B.S. in B.A. Indivisible course. *Note:* Students ranking high in Mathematics 11 may, with the consent of the Director of Division, meet the requirement for B.A. 160 by taking Economics 29a, *Statistical Methods*.

MR. HARGEST

Department of Chemistry

PROFESSOR BULLOCK, PROFESSOR MARTELL,[†] PROFESSOR KEGELES,
ASSOCIATE PROFESSOR SUGIHARA, ASSOCIATE PROFESSOR NES,*
ASSOCIATE PROFESSOR TRACHTENBERG,* PROFESSOR AFFILIATE
DORFMAN, VISITING ASSISTANT PROFESSOR UNGAR

Chemistry courses fall into two groups:

1. Those primarily for undergraduates. These provide a foundation for professional work in chemistry or medicine, and are suitable for students desiring some knowledge of the subject as part of their general education.

2. Those primarily for graduate students.

UNDERGRADUATE WORK

Students who intend to become professional chemists or to study for an advanced degree in chemistry should major in chemistry and take at least two years' work in physics.

They should normally conform closely to the schedule given below. However, an outstanding student may elect an accelerated program leading to advanced work in the junior and senior years.

REPRESENTATIVE FOUR YEAR CURRICULUM IN CHEMISTRY

First Year

English 11
German 11 (or French 11)
Chemistry 11
Mathematics 11
Elective, Group B

Third Year

Chemistry 17 and 170
German 13 (or French 14)
Two of the following:
Mathematics 13, Physics 15,
Physics 16, Physics 18, Physics
124, French 11 or German 11,
Geology, Biochemistry, Biology,
Groups B, C, or D.

Second Year

Chemistry 13
Physics 11
Mathematics 12
German 12 (or French 12)
Elective, Groups B, C, or D

Fourth Year

Chemistry 19
Two full courses from the following
list:
Chemistry 112b or 116, Chemis-
try 212b, Chemistry 215, Physics
15, Physics 17, Physics 22,
Physics 23, Biology, Mathematics,
French 12 or German 12.
Electives, Group B, C, or D.

[†] Absent on leave, 1958-59.

* Appointed 1958.

A student who satisfies the Department of Chemistry as to outstanding qualifications may elect Chemistry 13, Organic Chemistry, in place of Chemistry 11 in the freshman year. Chemistry 19 is required of all chemistry majors and is essential for work in physiology. Mathematics through Mathematics 13 is recommended as preparation for Chemistry 19 and for graduate work in chemistry. The same amount of mathematics is strongly recommended for all who elect chemistry as a major, and for all who expect to become professional chemists.

For professional work in chemistry, at least one year of graduate study is highly desirable.

Students who consider the possibility of later graduate study in chemistry are advised to secure a reading knowledge of German and either French or Russian in order to anticipate the requirements for higher degrees in most graduate schools.

Students who intend to enter the field of secondary education should acquaint themselves with the requirements in "education" of state and local licensing boards and prepare to meet these requirements. This may necessitate the omission of certain elective courses scheduled for the third and fourth years.

In most colleges, premedical students major in chemistry. Program B, outlined in the announcement of the Department of Biology, lists the courses most suited for preparation for all "Class A" medical schools. The special advantage of this program is the inclusion of Chemistry 19, necessary preparation for physiology.

Attention is called to laboratory fees and breakage deposits listed under the general heading "The Undergraduate Colleges" and the special heading "Fees and Expenses."

GRADUATE WORK

The Department of Chemistry offers advanced courses in the fundamental principles of physical, organic, inorganic, nuclear, and analytical chemistry, and these are supplemented by specialized courses and research work in physical, nuclear, and organic chemistry.

The graduate program is designed to lead to the degrees of Master of Arts and Doctor of Philosophy. Besides a successful completion of the fundamental courses offered in the graduate school, candidates for both degrees must show facility in conduct-

ing a laboratory investigation and a command of the subject which is chosen for the thesis or dissertation.

GRADUATE FELLOWSHIPS AND SCHOLARSHIPS

Scholarships, when granted, cover tuition, laboratory fees, and supplies. Teaching assistantships are available which require not more than eight hours per week of the student's time, permitting full-time work in the degree program. Other assistance is in the form of predoctoral fellowships sponsored by the university or by various research grants.

Many students are awarded summer fellowships, enabling them to pursue their research work more actively than is possible during the regular school year.

Assistantships and fellowships are allotted individually on the basis of the student's record. The maximum rate, including summer work, is \$2100 per year in addition to remission of tuition and laboratory fees, for an 11-month program.

Sponsors of fellowships and research programs include Clark University, National Science Foundation, Research Corporation, National Institutes of Health, Dow Chemical Company, Atomic Energy Commission, Eli Lilly and Co., Carbide and Carbon Chemical Company, Esso Research Foundation and others.

TRAINING PROGRAM FOR STEROID BIOCHEMISTRY

Recognizing the increasing importance of the steroid hormones in many fields of medical research, the National Cancer Institute of the National Institutes of Health, United States Public Health Service, has established grants for specialized training in steroid biochemistry at Clark University, in cooperation with the Worcester Foundation for Experimental Biology.

The training program will consist of both intensive training in laboratory procedures and in lectures covering the theoretical and practical aspects of steroid technology. Two groups of candidates will be selected each year for training awards. Stipends of \$1500 will be paid to ten individuals possessing a Bachelor's or Master's degree for a six month period of training. Stipends of \$5000 will be paid to five individuals possessing an M.D. or Ph.D. degree for a one year period. The latter advanced group will have the

opportunity to engage in basic research in the laboratory of an established investigator at the Worcester Foundation for Experimental Biology.

The lecture series of the training program will consist of five one-hour lectures per week for a sixteen week period starting in October. The lectures, to be given by staff members of Clark University, the Worcester Foundation, and selected guest lecturers, will include the fields of organic chemistry, physical chemistry (instrumentation) and steroid biochemistry. Opportunity to attend the lecture program will be offered to selected individuals by permission of the staff.

RESEARCH

The department offers research work in organic, physical-organic, nuclear, and physical chemistry in the following fields of investigation:

- Synthesis and chemical properties of organic sulfur compounds and aromatic amines.

- Synthesis of amino acids and other metal-ion complexing agents. Dipole moments of metal chelate compounds.

- Thermodynamic properties of metal chelate compounds.

- Dissociation constants of weak electrolytes from electromotive force measurements.

- Infrared and ultraviolet absorption spectra of metal chelate compounds.

- Optical methods for the study of inhomogeneous liquids.

- Diffusion of electrolytes, amino acids and peptides in water.

- Ultracentrifuge studies of proteins, synthetic high polymers and smaller molecules.

- Chromatographic analysis of proteins and their cleavage products.

- Nuclear reactions.

- Chemical effects of nuclear transformations.

- Radiochemical applications to analytical chemistry.

Modern research facilities include:

Supercritical hydrogenation apparatus, double-beam infrared recording spectrophotometer, ultraviolet recording spectrophotometer, precision conductivity bridge, precision capacity bridge for dielectric constants, recording polarograph, heavily shielded anti-

coincidence low-level Geiger counter, scintillation spectrometer, interferometric Gouy diffusion apparatus, continuous recording Rayleigh interferometer, and optical ultracentrifuge.

Much of the equipment was specially designed and assembled in the laboratory. The Department has a student machine shop to handle small work. Excellent machine shop facilities in Worcester have produced large parts for equipment of original design.

COURSE REQUIREMENTS

All graduate students are required to demonstrate an adequate reading knowledge of French and German prior to entrance into candidacy for the Ph.D. degree. Although this requirement may be met as late as the time of completion of M.A. requirements, experience has demonstrated that failure of the student to fulfill these requirements early in the course of graduate studies can act as a serious deterrent to satisfactory progress. It is therefore recommended that entering students prepare themselves for examination in at least one language at the beginning of the first semester of graduate studies.

Students registered for advanced degrees are expected to spend not less than eighteen hours per week in the laboratory. This may include special laboratory work in organic, organic-physical, nuclear, or physical chemistry.

A total of 16 semester courses in chemistry are offered in addition to the seminar, chemical-literature survey, and research. Eight semester courses are offered each year in addition to courses 350 and 380. Courses 310, 311, 320, 322, 330, 331, 340 and 341 are fundamental courses and are required for qualification for the Ph.D. degree.

The graduate program normally consists of six semester courses per year in addition to seminar and research, with the exception of the final year of Ph.D. candidacy, when it is generally expected that the student will be free to devote his major effort toward the completion of his research program. Two of these six courses may be taken in the related fields of mathematics and physics.

All graduate students participate in Chemistry 380 and participation in seminar, Chemistry 350, is required. Tuition is not charged for either of these non-credit courses. Emphasis is placed on research work from the time of the student's entrance

into the Department. A thesis is required for the master's degree as well as for the doctor's degree.

The length of time required for the master's degree is ordinarily three semesters because eight semester courses are required in addition to research work upon which the thesis is based. For the doctor's degree no time limit can be specified, but normally at least three years beyond the bachelor's degree are required for the completion of the research work.

The preliminary examinations that must be passed in order to be admitted to candidacy for the doctor's degree consist of two oral examinations. One of these is intended to be a literature survey in some area other than the one in which the student is conducting research. The subject is picked by the student.

The other examination is based on an original research problem proposed by the student. No limitations are placed on the area from which the problem can be drawn except that it cannot be a simple extension of the student's own research.

The first preliminary examination must have been passed before November 1 of the student's third semester at the University. For students entering the graduate school with a bachelor's degree the second examination must have been passed before November 1 of their seventh semester. For students holding master's degrees at the time of admission to the Graduate School, the second examination must have been passed not later than November 1 of their fifth semester.

It should be noted that according to university regulations the foreign language requirement, normally in French and German, must be satisfied before the preliminary examination requirement can be satisfied.

Since the length of time necessary to make satisfactory progress in the research is indeterminate, the student may complete the work for the doctor's degree without reference to the academic year. On completion of such work, the student receives a certificate from the department which allows him to take up a position at once, and he then receives the formal diploma at the next commencement.

The requirements for the doctor's degree include a reading knowledge of French and German, preliminary oral examinations, and a dissertation followed by an oral defense when the dissertation is complete.

Courses in Chemistry

During the academic year 1957-58 the following courses were given: * 11, 13, 17, 19, 116, 170, 212b, 215, 300, 310, 311, 321, 323, 324, 332, 333, 342, 345, 350, 380, 390.

PRIMARILY FOR UNDERGRADUATES

11. General Chemistry.

Systematic study of the elements and their principal compounds and the fundamental laws and theories of chemistry. Three lectures and three hours of laboratory work per week. Prerequisite for all other courses in chemistry. Divisible only by consent of instructor.

MR. BULLOCK

13. Organic Chemistry.

Lectures on the principles of organic chemistry and a laboratory study of the preparation and properties of important organic compounds. Three lectures and three hours of laboratory per week. Prerequisite: a grade of C— or better in Chemistry 11.

MR. TRACHTENBERG

17. Principles of Analytical Chemistry.

Theories and principles of chemistry underlying volumetric and gravimetric analysis as well as more advanced analytical methods. Three lectures per week. Must be taken concurrently with Chemistry 170. Prerequisites: Chemistry 13, Mathematics 12 (may be taken concurrently), Physics 11.

MR. SUGIHARA

19. Physical Chemistry.

Principles of physical chemistry including gases, liquids, solutions, crystalline solids, chemical thermodynamics, homogeneous and heterogeneous equilibria, electrolytic conductance and transference, electromotive force, reaction kinetics, colloids. Required for a major in chemistry. Three hours of lectures and three hours of laboratory per week. Prerequisites: Chemistry 17, 170. Mathematics 13 is strongly recommended.

MR. KEGELES

* Course 13 given by Mr. Bullock in 1957-58.

Courses 11 and 116 given by Mr. Martell in 1957-58.

Course 390 given by Mr. Ungar in 1957-58.

112b. Physico-Chemical Methods.

An advanced laboratory course in physical chemistry. Registration limited. Open to students who have taken or are taking Chemistry 19. One lecture and six hours of laboratory work per week.

MR. KEGELES

116a. Organic Qualitative Analysis.

Prerequisite: Chemistry 13. One lecture and six hours of laboratory work per week.

MR. BULLOCK

116b. Advanced Organic Synthesis.

Prerequisite: Chemistry 13. One lecture and six hours of laboratory work per week.

MR. BULLOCK

170. Analytical Chemistry Laboratory.

Must be taken concurrently with Chemistry 17. Volumetric and gravimetric analysis and an introduction to instrumental and other advanced analytical methods. Two three-hour laboratory periods per week. Prerequisites: Chemistry 13, Mathematics 12 (may be taken concurrently), Physics 11. Half course.

MR. SUGIHARA

**FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS**

212b. History of Chemistry.

Outline of historical development of the science, and the relation of chemistry to other sciences at various periods of development. Lectures, collateral reading, reports and thesis. Open to graduate students and seniors who take or have taken Chemistry 13 and 19 or equivalent courses.

MR. BULLOCK

215. Honors Course.

Primarily for candidates for "honors in chemistry." A laboratory research project.

STAFF

218a. Biochemistry.

A study of chemical reactions occurring in biological systems, including intermediary and general metabolism, fermentation, and biosynthesis of important tissue constituents such as amino acids, lipids, nucleic acids, vitamins, and porphyrins. The functions of enzymes and the mechanisms of biological reactions. Recommended for students planning to undertake graduate work in organic chemistry, biology, biochemistry,

and biophysics. Three hours of lectures per week. Prerequisites: C or better in Chemistry 13; Chemistry 17a (may be taken concurrently).
MR. NES

218b. Biochemistry.

A continuation of Chemistry 218a. One hour of lecture and two 3-hour laboratory periods per week.
MR. NES

PRIMARILY FOR GRADUATE STUDENTS

All courses listed below are semester courses except 300, 350, and 380, given through the year.

300. Research.

STAFF

310. Molecular Structure.

[Not offered 1958-59]

Theories of electronic structure and relationship between chemical binding and physical properties of various substances. Dipole moments, magnetic properties, bond energies and stereochemistry of organic and inorganic compounds. First semester.
MR. MARTELL

311. Reaction Mechanisms.

[Not offered 1958-59]

Electronic interpretations of chemical reactions, acid-base concepts and solution catalysis, free-radical and ionic mechanisms. Second semester. Chemistry 310 and 311 offered together in alternate years.
MR. MARTELL

***320. Advanced Physical Chemistry.**

Selected topics in physical chemistry described in detail: chromatography, electrochemistry, Debye-Hückel theory. Second semester.
MR. KEGELES

321. Colloid Chemistry.

[Not offered 1958-59]

Osmotic and sedimentation equilibrium. Sedimentation velocity; diffusion. First semester.
MR. KEGELES

***322. Thermodynamics.**

Applications of classical thermodynamics to chemical systems. First semester.
MR. KEGELES

323. Statistical Mechanics.

Statistical mechanical analogs of thermodynamic functions and their application to chemical systems. Second semester.
MR. KEGELES

* Chemistry 320 and 322 and Chemistry 340 and 341 are offered together in alternate years.

- 324. Refractometric Techniques.** [Not offered 1958-59]
Applications of refractometric methods to the study of optically inhomogeneous media. Methodology employed in electrophoresis, ultracentrifugation, diffusion and chromatography. Second semester. **MR. KEGELES**
- 330. Advanced Organic Chemistry.**
Effects of functional groups on synthesis. **MR. BULLOCK**
- 331. Organic Chemical Reactions.**
Lectures on the fundamental reactions in organic chemistry. Chemistry 330 and 331 offered together in alternate years. **MR. BULLOCK**
- 332, 333. Heterocyclic Compounds.** [Not offered 1958-59]
Chemistry 332 and 333 offered together in alternate years. **MR. BULLOCK**
- *340. Quantum Chemistry.**
Review of classical concepts and experiments from which quantum mechanics evolved, the old quantum theory, elementary quantum mechanics of simple systems, properties of wave functions, approximation methods for complex systems. First semester. **MR. SUGIHARA**
- *341. Quantum Chemistry and Advanced Inorganic Chemistry.**
Applications of quantum mechanics to atomic and molecular spectra, periodic classification of many-electron atoms, chemical and physical properties of atoms and simple ions as functions of electron structure, magnetic properties, kinetic theory and statistics. Second semester. **MR. SUGIHARA**
- 342. Nuclear and Radiochemistry.** [Not offered 1958-59]
Fundamentals of nuclear science, including nuclear structure, modes of radioactive decay, interaction of nuclear particles with matter. Radiochemical techniques of production, isolation, and identification of radioactive atoms, introduction to techniques of preparation and measurement of radio-elements, applications to problems in chemistry and physics. First semester. **MR. SUGIHARA**

* Chemistry 320 and 322 and Chemistry 340 and 341 are offered together in alternate years.





345. Selected Topics in Advanced Nuclear and Radiochemistry.

[Not offered 1958-59]

Prerequisite: Chemistry 342. Second semester.

MR. SUGIHARA

350. Seminar.

Reports on research work and discussions of recently published work.

GUEST LECTURERS, STAFF AND GRADUATE STUDENTS

360. Coordination Compounds.

[Not offered 1958-59]

Lectures on the chemical properties of metal complexes, with emphasis on recent developments in the field of metal chelate compounds. First semester. Time to be arranged.

MR. MARTELL

361. Principles of Instrumental Analysis.

[Not offered 1958-59]

A study of the principles involved in the use of analytical instruments, including potentiometry, infrared and ultraviolet absorption spectrophotometry, and polarography. Second semester. Time to be arranged.

MR. MARTELL

380. Research Conference.

Informal reports of research work being done in the laboratory.

STAFF AND GRADUATE STUDENTS

390. Special Graduate and Post-Graduate Course in Steroid Biochemistry.

A training program for steroid biochemistry sponsored by the National Cancer Institute, U.S.P.H.S., at Clark University in conjunction with the Worcester Foundation for Experimental Biology, open to qualified personnel with advanced degrees, M.D., Ph.D., and graduate students. Lecture series, by special permission.

MR. NES, STAFF, AND GUEST LECTURERS

Department of Classics

ASSOCIATE PROFESSOR BARLOW

The Department of Classics provides undergraduate courses for acquisition of a reading knowledge of Greek and Latin and for the study of literary masterpieces in those original languages. Advanced courses leading to a major in Classics are offered from time to time. Other courses, given entirely in English, deal with all phases of the Greek and Roman civilizations.

Since it is not possible to offer courses in elementary Greek and Latin every year, students who desire to elect them should consult the instructor as far in advance as possible.

Prize in Greek. The Ahepa Greek Prize of twenty-five dollars is awarded to the best student in *Elementary Greek*. Income for the prize is provided by the Worcester chapter, Order of Ahepa.

Courses in Classics

During the academic year 1957-58 the following courses were given: Greek 11, 123a; Latin 13, 17a, 123b.

GREEK

11. Elementary Greek.

Greek grammar through forms, syntax, vocabulary, and reading; selections from Xenophon's *Anabasis*. Open to freshmen. Indivisible course.

MR. BARLOW

12. Attic Greek Prose; Homer's Iliad.

Prerequisite: Greek 11.

MR. BARLOW

13. Greek Drama.

[Not offered 1958-59]

Prerequisite: Greek 12 or equivalent.

123a. Greek Civilization.

Lectures, readings, and discussion on the history, literature, philosophy, art, religion, and government of ancient Greece, with emphasis on the elements which have contributed most to Western civilization. Given in English. Open to freshmen.

Greek 123a may be counted with Latin 123b in fulfillment of the general requirement in art, music, and literature (Group D), but not in fulfillment of the requirement in foreign language.

MR. BARLOW

LATIN

11. Elementary Latin.

Introduction to the Latin language through forms, syntax, and vocabulary, with emphasis on the Latin element in English words. Selections from Latin prose. Open to freshmen. Indivisible course.

MR. BARLOW

12. Cicero's Orations; Vergil's Aeneid [Not offered 1958-59] Prerequisite: Latin 11 or two years of Latin.

13. Catullus and Horace; Plautus and Terence.

The course may begin with prose selections to rectify the lack of uniformity in preparation in secondary schools. Prerequisite: Latin 12 or at least three years of Latin.

MR. BARLOW

15. Roman Historians; Poets of the Augustan Age. Prerequisite: Latin 13.

MR. BARLOW

17. Roman Philosophers; Roman Satire. [Not offered 1958-59]

19. Survey of Latin Literature. [Not offered 1958-59]

123b. Roman Civilization.

Lectures, readings, and discussion on the history, literature, philosophy, art, religion, law, and government of ancient Rome, with emphasis on the transmission of Greek civilization and the condition of the Roman Empire during the early years of Christianity. Given in English. Open to freshmen.

Latin 123b may be counted with Greek 123a in fulfillment of the general requirement in art, music, and literature (Group D), but not in fulfillment of the requirement in foreign language.

MR. BARLOW

Department of Economics and Sociology

PROFESSOR MAXWELL, PROFESSOR MELDER, ASSOCIATE PROFESSOR KILLIAN, ASSOCIATE PROFESSOR HARGEST, ASSOCIATE PROFESSOR NICHOLSON,* ASSOCIATE PROFESSOR VAN TASSEL, ASSISTANT PROFESSOR BALKO, ASSISTANT PROFESSOR LEVENSON, LECTURER BREEN, LECTURER BOSLAND, LECTURER SHELDON, LECTURER BROTHWELL, LECTURER ONORATO

UNDERGRADUATE WORK

The first aim of the department, in its undergraduate courses, is to give the student a comprehensive grasp of the underlying principles and functions of our economic and social institutions, and to develop habits of systematic and unbiased thought about these institutions. Some of the courses, however, contribute to the student's preparation for a business or professional career (Economics 13, 15, 22, 26, etc.) and are specifically recommended to students who are candidates for the degree of Bachelor of Science in Business Administration. Conversely, some students majoring in economics may be advised to elect certain courses in Business Administration which are credited toward the degree of Bachelor of Arts (Business Administration 100, 102, 120a, 121b, 140, 150a, 160, 170b, 182a, 184).

Students who have an interest in Business Administration but prefer a program which is less intensive than that required of candidates for the degree of Bachelor of Science in Business Administration may enroll as candidates for the degree of Bachelor of Arts with a major in economics. Such students should take the normal college program. In the second year, they should elect *Economics 11* and *Business Administration 100*. In the third and fourth years, they should select courses in economics and in business administration in consultation with their advisers.

* Appointed 1958.

Economics 11 is a prerequisite to all other courses in economics. Similarly, Sociology 11 is a prerequisite to other courses in sociology. Courses taken outside the department in partial fulfillment of the major requirement should be selected, subject to departmental approval, so as to provide a unified program centering about the student's major interest. Majors in economics will ordinarily be required to take Economics 205a, Intermediate Economic Theory.

Candidates for departmental honors will engage in a program of independent study consisting of reading and research designed in part to give them specialized training in the fields of their major interest and in part to supplement formal courses. Ordinarily a candidate will begin his honors work in the second semester of the junior year by enrolling in the Honors Seminar.

Courses in sociology will be found listed, with descriptions, immediately after the list of courses in economics.

In making elections, students should bear in mind that some advanced courses are offered only in alternate years.

GRADUATE WORK

The program for the degree of Master of Arts is worked out individually with each student.

For the degree of Doctor of Philosophy, which may be taken in Economics, each student must choose six fields of study to be agreed upon as early as possible in the first year of residence beyond the M.A. A range of courses is offered in cycles of two or three years. Individual work with instructors constitutes a considerable part of the program.

The classification of courses as undergraduate, intermediate, and graduate is an elastic one. Graduate students of economics should regard certain courses in business administration as part of the offerings of the Department of Economics and Sociology.

Courses in Economics

During the academic year 1957-58 the following courses were given:* 11, 13a, 13b, 15a, 21b, 22, 25b, 26, 28, 200a, 205a, 207a, 207b, 211b, 280b, 39a, 39b, 311, 322, 325, 326, 327, 340.

Descriptions of courses listed below under the designation "Business Administration" will be found in the announcement of "Courses in Business Administration."

PRIMARILY FOR UNDERGRADUATES

11. Principles of Economics.

Indivisible course.

MR. VAN TASSEL

Assisted by MR. COUPE

Business Administration 100. Accounting.

Business Administration 102. Intermediate Accounting.

Business Administration 150a. Marketing.

Business Administration 182a. Personnel Management.

13a. Money and Banking.

MR. MAXWELL

13b. Problems in Money and Banking.

Central banks, particularly the Federal Reserve System; monetary standards; theories of foreign exchange; monetary policy in the United States. Prerequisite: Economics 13a or its equivalent.

MR. MAXWELL

140b. Consumer Economics.

Consumers' roles in a market economy and their problems arising in the purchase of the customary goods and services. Emphasis is upon housing, insurance, savings, investments, consumer services supplied by advertisers, private non-commercial agencies, the government, and the cooperative movement.

MR. MELDER

15a. Public Finance.

The principles of governmental expenditures, revenues, and debts, with particular reference to the United States.

MR. MAXWELL

* Courses 21b, 211b, and 39b given by Mr. Brothwell in 1957-58.

Course 26 given as a half course, first semester, by Mr. Bosland in 1957-58.

Course 340 formerly a general number for thesis fields. In the current catalog specific numbers have been assigned to the different thesis fields.

- Business Administration 120a. Corporation Finance.
Business Administration 121b. Introduction to Investments.
Business Administration 140. Business Law.
Business Administration 160. Business Statistics.
Business Administration 184. Labor Relations.

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

200a. Economic Growth.

Analysis of economic, cultural, social and political factors making for growth. Factors within underdeveloped countries which hinder economic development will be examined.

MR. MELDER

205a. Intermediate Economic Theory.

An analysis of contemporary price theory. MR. VAN TASSEL

Business Administration 252a. Marketing Research.

207a. International Trade Theory.

Emphasis is put on international value determination and the mechanisms for adjusting to international disequilibrium.

MR. VAN TASSEL

207b. International Economic Policy.

A review of the rise of the world trading economy, techniques of commercial policy, and major questions of international economic policy. Prerequisite: Economics 207a.

MR. VAN TASSEL

21a. Business Cycles.

[Not offered 1958-59]

Analysis of recurrent business fluctuations differentiating the typical business cycle and its phases. Treatment of the history, theories of causation and proposals for control of the business cycle.

21b. National Income Analysis.

A study of contemporary income theory. MR. VAN TASSEL

210a. Economic and Social Reform.

[Not offered 1958-59]

The development of economic institutions by society in its attempt to solve basic economic problems by free enterprise or planning. Attention is given to the contemporary industrial organization of the American economy.

211b. Comparative Economic Systems. [Not offered 1958-59]

An analysis of contemporary or recently industrialized economic systems such as capitalism, socialism, and fascism, followed by a consideration of these systems as currently or recently found to exist in specific nations. MR. BROTHWELL

Business 290. Analysis of Business Problems.**22a. Labor Economics.**

A survey of the nature of labor economics and labor problems, including the several approaches of organized workers and employers to these problems. MR. MELDER

22b. Labor Economics.

Applications of economic analysis to wages, unemployment, and related issues. The approach of government to labor force problems, including industrial relations and social insurance. MR. MELDER

231. Economic History of the United States. [Not offered 1958-59]
MR. MAXWELL**24b. History of Economic Doctrine.**

After a quick survey of ancient writers, attention will be given to Mercantilism and the doctrinal reaction from it as expressed by the Physiocrats and the Classical economists.

MR. MAXWELL

25b. Problems in Public Finance.

The theory underlying the so-called "full employment" act of 1946 is discussed, along with methods by which it may be implemented. Other questions examined are: reform of the federal corporate income tax and death duties, incentive taxation, federal debt policy, the capital budget, federal budgetary procedure. MR. MAXWELL

Business Administration 255b. Marketing Policies.**26. Industrial Organization and Governmental Control.**

Examination of the various forms of governmental regulation applied to our present industrial organization. Appraisal of existing governmental controls in specific industrial situations. Conducted on a seminar basis with student papers and reports often forming the basis for discussion. MR. NICHOLSON

28. Research in Selected Economic Problems.

STAFF

280b. Honors Seminar.

Designed to assist honors candidates in integration of the field. Prerequisite for honors.

STAFF

29a. Statistical Method.

The nature of statistics; statistical description; statistical inference; special topics. Special emphasis will be given to theoretical and observed frequency distributions, elements of probability theory, problems of sample design and interpretation, decision theory, time series, index numbers, and measures of association and correlation.

Ordinarily required of all majors in Economics. With the approval of the Director of the Division of Business Administration, this *half course* may be substituted for B.A. 160, Business Statistics, by candidates for the degree of Bachelor of Science in Business Administration.

PRIMARILY FOR GRADUATE STUDENTS

39a. Economic Theory.

Analysis of the theories of representative economists. Most attention is given to Marshall, Chamberlin, Keynes.

MR. MAXWELL

39b. Recent Economic Theory.

[Not offered 1958-59]

This course examines the two outstanding "post-Keynesian" developments in micro-analysis: dynamic theories of cyclical fluctuations and secular growth analysis. The connection between economic growth and instability is a main theme.

MR. BROTHWELL

311. Seminar

STAFF

313. Reading	} In Money and Banking	MR. MAXWELL
31. Thesis		

322. Reading	} In Labor	MR. MELDER
32. Thesis		

324. Reading	} In Marketing	MR. BALKO
33. Thesis		

325. Reading	} In Public Finance and Fiscal Policy	MR. MAXWELL
34. Thesis		

326. Reading	}	In Business Organization and Government Control of Industry	MR. NICHOLSON
35. Thesis			
327. Reading	}	In International Economics	MR. VAN TASSEL
36. Thesis			
339. Reading	}	In Economic Theory	MR. MAXWELL
37. Thesis			

Sociology

UNDERGRADUATE WORK

An undergraduate whose primary interest is in sociology may meet the department requirement for a major by completing Economics 11 and three or four courses in sociology together with two or three approved courses in related departments. Related courses require departmental approval and must be discussed with advisers each registration day.

GRADUATE WORK

A range of courses sufficient for the needs of candidates for the master's degree only is offered. Individual work with instructors and small intimate seminars constitute a goodly part of the graduate student's program.

PREPARATION FOR LAW SCHOOL

A rigid program of pre-law core courses is discouraged by most law schools, by the American Bar Association, and by the Association of American Law Schools. Undergraduates heading for law schools are advised to seek a broad college education. The major field for the student undergraduate is not limited to a particular subject or a fixed group of studies. Some attention to the social sciences is generally favored, but is not mandatory.

Over the years many Clark students have been admitted to the best law schools in the country, often with very good scholarships. Within the last five years, for instance, two Clark men have captured a Root-Tilden scholarship, paying each man over \$7,000 toward expenses while attending New York University Law School.

There is an active student law club at Clark University. Distinguished lawyers and judges address the members and often talk to appropriate classes. Mr. Frederick W. Killian of the Department of Economics and Sociology, and also a lawyer, serves as adviser to those students planning to attend law schools. He is in close touch with legal education, and is readily available for consultation about law schools, scholarships, and undergraduate programs.

Courses in Sociology

During the academic year 1957-58 the following courses were given: 11a, 11b, 15a, 16a, 23b, 29a, 29b.

PRIMARILY FOR UNDERGRADUATES

11a. Introductory Sociology: Principles of Sociology.

The development of man; culture; culture and personality; social organization and structure; groups and group life; social relations; social norms; collective behavior; human ecology and population; socialization and social interaction; social disorganization and change; social institutions. Prerequisite for further work in sociology.

MR. KILLIAN

Assisted by MR. GOLDSTEIN

11b. Introductory Sociology: Sociological Analysis.

The application of sociological principles to the analysis of social situations, social problems and society. Prerequisite for further work in sociology.

MR. KILLIAN

Assisted by MR. GOLDSTEIN

12a. Introduction to Cultural Anthropology. [Not offered 1958-59]

The evolution and development of man and his culture; basic concepts; the races of man and their distribution; processes of adaptation and adjustment through culture; primitive, historic and modern culture complexes compared; divergence, transmission, and function of culture; origin and growth of civilizations; contemporary pre-literate peoples; relationship of anthropology to the other social sciences.

15a. Social Institutions.

[Not offered 1958-59]

Institutional theory. History and development of major social institutions. Social control and social institutions. The basis of institutions in primitive experiences; belief systems of

primitive peoples; family and kinship systems; institutional differentiation. Religious institutions and political institutions in the historical contexts of Hebrew, Greek, Roman and modern experiences. Person, self and institutions.

MR. KILLIAN

- 16a. **Social Problems and Their Analysis.** [Not offered 1958-59]
Contemporary social problems in the United States; the sociological means for their analysis. MR. SHELDON

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

21a. **The Family and Society.**

The institutions of the family and of marriage as major systems of social control in Western society. Kinship among pre-literate peoples. The patriarchal family of the Hebrews; the Roman trustee family and its decline; the domestic family of Europe; the impact of modern conditions on the family. The family and institutional theory.

MR. KILLIAN

- 23b. **Crime, Delinquency and Society.** [Not offered 1958-59]
Criminal law and the impact of the study of criminology. Attempts to find "causes of crime." Patterns of criminal behavior. Social control of crime and delinquency. Modern methods of treatment and contemporary corrections.

MR. KILLIAN

25b. **Social Institutions: Legal Institutions.**

Law and the social order: development of Western legal institutions; the normative content and analysis of legal institutions and law; relation to religious institutions; the legal tradition in Western society; law as a means of social control. *Law, science and policy:* law and its functions in modern times; the changing basis of legality; premises concerning man and his world in relation to law and its function. Sociology, anthropology and law. Selected readings in theory and analysis of case materials.

MR. KILLIAN

27. **Industrial Sociology.** [Not offered 1958-59]
A study of industrial society with special emphasis on the relationships among persons as members of the many groups included in this society. The impact of social institutions on the character of the relationships studied. The formal

and informal groups within the industrial form will be given attention as will the firm and community, viewed as interacting organizations.

29a. Social Theory and Introduction to Sociological Concepts.

The development of man's ideas about social life from Plato to Spencer. The general developments of sociology since Spencer. Required of Sociology majors. MR. KILLIAN

29b. Advanced Sociological Theory.

The writings of Sumner, Durkheim, Max Weber, Cooley, Mead, Becker, MacIver, and Parsons. The trend of sociological theory. The course is centered in the writing of a detailed term paper. MR. KILLIAN

28. Research in Selected Sociological Fields.

This course includes departmental honors and other individual projects by special permission of the department.

Department of Education

PROFESSOR JONES, ASSOCIATE PROFESSOR BORGER, ASSOCIATE PROFESSOR COFFEE, ASSISTANT PROFESSOR NASH, LECTURERS HARRIMAN AND SHEPHERD

With the cooperation of PROFESSOR WARMAN of the Graduate School of Geography, ASSOCIATE PROFESSOR BECK of the Department of Philosophy, MR. GRANGER, Director of Physical Education for Men and Miss HUGHES, Dean of Women.

The Department has as its primary objective the providing of cultural and professional study for teachers and prospective teachers in elementary and secondary schools and academies. It offers introductory courses in Education for all students who may be interested in teaching, and well integrated programs of training at both the elementary and high school levels.

UNDERGRADUATE WORK

The Department encourages all students who may be interested in preparing for teaching to consult with some member of its staff as early in their career at the College as convenient. The actual

electing of courses in Education, however, should be postponed until the junior year. During the first two years, students should complete as many of the specific requirements for the A.B. degree as possible, and lay a broad foundation of scholarship.

In conformity with its policy of emphasizing the importance of scholarly background in the preparation of teachers, the Department offers its courses as electives, and not as a major in the College. This means that the students preparing to teach should elect their majors with careful attention to extensive preparation in areas in which they wish to teach.

Education courses at the undergraduate level are offered primarily with three purposes in mind: (1) To provide introductory instruction to students who plan to teach in secondary schools and academies, and who in preparation for such teaching plan a fifth year of study, leading to the degree of Master of Arts in Education. (2) To provide an integrated program of courses and internship teaching to students who, immediately upon graduation, wish to teach in elementary schools. (3) To offer certain introductory courses in Education to students who have not definitely decided upon teaching as a career but who desire some acquaintance with the problems of the field.

For students desiring to enter elementary school teaching immediately upon receiving the A.B. degree, a program has been evolved, in cooperation with the Faculty of the College, whereby the election of up to 18 semester hours in Education may be possible, including internship teaching in the first semester of the senior year. Since the amount of professional work in Education forms so large a percentage of the program of study of such students in the junior and senior years, it is obvious that careful planning must be done throughout the college course to have the desired number of electives available for work in Education in these last two years.

GRADUATE WORK

For students wishing to prepare for teaching in secondary schools and academies the Department recommends high concentration in the undergraduate program upon the subject-matter fields in which they wish to teach, and suggests that they reserve for a fifth year most of the professional work in the theory and practice of teaching. A fifth year program leading to the degree of Master of Arts in

Education is offered by the Department with majors available in elementary and secondary teaching aid. The program includes additional work in the student's subject-matter field, professional courses in Education, and supervised internship teaching in secondary schools. The Master's degree is more and more being required of new appointees in high schools, and is usually rewarded by a higher level of remuneration. To assist high ranking students who find the one year of full time graduate work difficult to finance, the Department has a limited number of scholarships available to assist with tuition costs.

Requirements. The requirements for the degree of Master of Arts in Education cannot be adequately stated in terms of courses to be taken, because the evaluation of the work of each student will be made on the basis of achievement rather than on the basis of courses completed. However, the minimum essentials in terms of course requirements are outlined below.

Course requirements. The student is expected to elect one of the following groups of studies as the field in which he wishes to teach:

- (a) Mathematics and natural sciences
- (b) History, geography, and economics
- (c) Ancient and modern foreign languages
- (d) English, alone or in combination with some related subject.

Prior to receiving the degree, the candidate must have completed in undergraduate and graduate study combined not less than five year-courses in one of the above groups, or in a combination of groups approved by the Department of Education. At least two semester-courses in a subject-matter field must be taken as a part of the study in residence for the advanced degree and must be passed with a grade of B— or better for graduate credit. In addition to the above requirement in the subject-matter field, eight semester-courses of graduate work in education will normally be required. The program of courses to meet these requirements must be approved in advance by the Department. Changes in the proportion of education and subject-matter courses may be made by the Department on the basis of the candidate's previous training. Work, additional to the above requirements, either in the subject-matter field or in education, or both, may be required if this seems necessary for the adequate preparation of the candidate.

Internship Teaching. The Department provides opportunities for internship teaching under supervision for all graduate students majoring in Education. For graduate students of the Department who have not had teaching experience, satisfactory work in internship teaching is a requirement for the degree of Master of Arts in Education.

Thesis or Additional Study in Lieu of Thesis. All candidates for the degree of Master of Arts in Education must choose one of the following plans:

(a) Prepare an acceptable thesis or special report.

(b) Elect, in lieu of thesis, two additional semester courses in subject-matter fields (making a total of at least 4 semester courses in subject-matter area). This plan will apply primarily to experienced teachers and particularly to those doing much of their study in the summer sessions.

(c) Elect, in lieu of thesis, a two-semester or double seminar in which intensive work will be required in preparing and presenting reports before fellow graduate students and the staff.

Final oral examination. The passing of a final oral examination will be required of all candidates.

Courses in Education

During the academic year 1957-58 the following courses were given: 27b, 200a, 200b, 201a, 201b, 203b, 207b, 208a, 209a, 210a, 214a, 214b, 215a, 260b, 263a, 290b, 311a, 311b, 312b, 315a, 350, 380b.

PRIMARILY FOR UNDERGRADUATES

200a. Historical Foundations of Education.

The historical factors involved in the development of modern education. The course is designed for both the prospective teacher and the general student interested in education as an institution in American society.

MR. NASH

200b. Philosophical Foundations of Education.

The philosophical background for the educational principles and practice in American schools.

MR. NASH

FOR GRADUATE STUDENTS AND ADVANCED
UNDERGRADUATES

201a. Educational Psychology: Child Growth and Development.

Principles basic to the understanding of children with special attention to emotional and social development and learning in the elementary school years.

MR. COFFEE

201b. Educational Psychology: Adolescent Growth and Development.

Psychological principles as they bear upon learning and other problems of education with special reference to the growth and development of youth of secondary school age. Extra work required of undergraduates.

MR. JONES

203b. Curriculum Development in Secondary Education.

The historical background, basic issues, principles, and procedures of curriculum organization and development in secondary schools. Extra work required of undergraduates.

MR. NASH

207b. Use of Audio-Visual Materials in Teaching.

Principles and practices in the use of visual and auditory materials and community resources in teaching. Extra work required of undergraduates.

MR. BORGER

208a. Methods and Materials in Secondary Education.

Methods and techniques used by the teacher in high school teaching, and a survey of materials available. Extra work required of undergraduates.

MR. NASH

209a. Teaching of Social Studies.

Objectives, methods and materials used in the teaching of the social studies in the elementary and secondary schools. Extra work required of undergraduates.

MR. BORGER

210a. Educational Psychology, Advanced: Psychological Approach to Citizenship Development.

A study and evaluation of the theoretical formulations and experimental evidence on the problem of values as they relate to character and citizenship development among children and adolescents. Extra work required of undergraduates.

MR. JONES

214a. Tests and Evaluation: Measurement of Ability and Achievement.

The methods and problems involved in the evaluation of abilities and accomplishments of children and youth. Attention will be given both to standardized instruments and to teacher-made tests of achievement.

MR. JONES

214b. Tests and Evaluation: Advanced Problems.

The measurement and evaluation of aptitudes, interests, attitudes, and personality with special attention to the problems of reliability of measurement and the possibilities of the use of such measures in teaching and counseling.

MR. JONES

215a. Internship Teaching in the Elementary School.

An extended period of observation and practice in teaching under supervision in regularly organized classes in the middle grades in public schools. Each student is assigned to a critic teacher, under whom he or she works for a minimum of two days per week for the first semester. The first two weeks of this period is normally devoted to observation; the remainder of the time to teaching, under supervision. Lesson planning, pupil evaluation, and playground supervision are required of each student.

MR. JONES, MRS. HARRIMAN,
AND CRITIC TEACHERS

20b. (Geography 20b.) Geography in Education.

Geography in the present-day American schools. The course is designed to meet the needs of those expecting to teach geography. Extra work required of undergraduates.

MR. WARMAN

27b. Principles of School and Recreational Leadership.

The basic concepts and techniques of educational and recreational leadership. Lectures, readings, discussions, and field work. Permission of instructor required for registration. Extra work required of undergraduates.

MISS HUGHES

263a. Methods and Materials in Teaching of Language Arts in the Elementary School.

Methods and materials in the teaching of the language arts, in the middle grades, with special reference to reading. Particular emphasis will be given to provision for individual differences in teaching, and to the development of independent study skills. Field trips to selected schools will be arranged. Extra work required of undergraduates.

MR. SHEPHERD

260b. Curriculum Development in Elementary Education.

A study of the most essential materials and methods in elementary school instruction. Special attention will be given to the methods of teaching and learning in the social studies and mathematics, with brief units on the methods of co-operating most effectively with special teachers in the arts. Lectures and demonstrations by visiting specialists will be provided on particular topics, and field trips will be arranged for classroom demonstrations of certain principles and procedures. Extra work required of undergraduates.

290b. Philosophy of Education.

The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems.

MR. NASH

PRIMARILY FOR GRADUATE STUDENTS**310b. Citizenship Development: Methods and Materials.**

A study of procedures and programs in character and citizenship education in the schools. Attention will be given not only to curricular and co-curricular activities in the schools but also to the inter-relations between the school and other institutions and agencies in the community as they relate to the development of values and conduct in youth.

MR. JONES

311a. Principles, Practices, and Organization of Guidance.

A survey of guidance and personnel work. Principles bearing upon guidance and student personnel practices will be developed. Aspects of related fields will be reviewed sufficiently to indicate the scope and content of guidance and personnel work. The problem of organizing and administering a guidance program will form an important part of this course.

MR. COFFEE

311b. Guidance: Counseling.

Emphasis in this course will be upon the theory and methodology of counseling and upon the management of typical counseling problems. The diagnosis and referral of behavior disorders and related personality maladjustments will be considered. Case materials will be presented and analyzed.

MR. COFFEE

312. Guidance: Occupational Information and Placement.

The first part of this course will contain instruction and training in the use of occupational information in vocational guidance along with a consideration of the psychological and sociological factors related to occupational choice and job satisfaction. The second part will emphasize the organization of the placement service.

MR. COFFEE

315a. Internship Teaching in the Secondary School.

An extensive period of observation and teaching in the field or fields in which the student plans to teach in secondary school. Individual supervision is given by the department and by critic teachers in cooperating schools.

MR. JONES, MR. NASH, AND CRITIC TEACHERS

350. Research in Education.

Individual direction of students in their research projects.

STAFF

380b. Departmental Seminars on Current Problems.

STAFF AND GRADUATE STUDENTS

Department of English

ASSOCIATE PROFESSOR ANDERSON,* ASSOCIATE PROFESSOR CARTER,
ASSOCIATE PROFESSOR BEARD,† ASSISTANT PROFESSOR LETENDRE,
MRS. CUNNINGHAM, MR. BORRNER, MR. HASTINGS,‡ VISITING IN-
STRUCTOR HABER.‡

Freshmen must take both semesters of English 11.

General Education 17 (Great English and American Writers) is designed especially for non-English majors, and either half is recommended for students who wish to take a course in literature as a means of fulfilling the requirement of a third semester of English beyond English 11. English 13a, 111, and other courses (with the consent of the instructor) are also open to non-English majors; especially recommended is English 13a (Introduction to Poetry).

A major in English consists of a minimum of seven courses in addition to English 11, as follows:

1. English 13a. Normally this course should be taken in the sophomore year. *For English majors*, English 13a is prerequisite to any of the following courses: 101b, 104, 105, 107a, 110, 113, 117b, and 122a.
2. English 150b and three other half-courses in English from a group of courses open only to juniors and seniors, namely: 101b, 104, 105, 107a, 110, 113, 117b, and 122b.
3. Three additional half-courses in English.
4. Three courses in allied fields: General Education 14; a year course in philosophy (preferably Philosophy 12); and one other course approved by the Department of English, preferably from the following list: Fine Arts 11, General Education 143, French 113, German 141, Greek 123a, History 12, History 230, Latin 123b, and Music 12.

An English major who has not been credited with two units of Latin or Greek for admission to the college must complete either a course in Latin or Greek or both of the following half-courses, given in English: Greek 123a and Latin 123b.

* Absent on leave, first semester 1958-59.

† Absent on leave 1958-59.

‡ Appointed 1958.

English majors should follow as closely as possible the following program:

First year

English 11

Group A

Group B (General Education 14)

Foreign language

One elective (A course which meets the general bachelor of arts requirement in Fine Arts is recommended.)

Second year

English 13a and three other half-courses in English from groups of courses open to sophomores, namely: 16a, 18, 19b, 111, 126a, 127a, 142b, and General Education 18

Group A

Foreign language

One elective. Courses recommended are Fine Arts 11, Music 12, General Education 143, History 12 and 230, French 113, German 141, Latin 123b and Greek 123a.

Third Year

Two half-courses in English from courses open only to juniors and seniors

Two other half-courses in English (recommended)

Foreign language

Group B (a year course in philosophy)

One elective

Fourth year

English 150b and one other half-course in English from courses open only to juniors and seniors

Two other half-courses in English (recommended)

Three electives.

PRIZES IN ENGLISH

The Hoyt Poetry Prize of fifteen dollars is awarded annually by the Department of English for the best poem by an undergraduate. This is the interest on a fund established by the alumni as a memorial to Prentiss Cheney Hoyt, Professor of English at Clark University from 1909 to 1920.

The Loring Dodd Drama Contest, inaugurated in 1955, offers a prize of \$30 to the student writing the best one-act play. Loring Dodd was Professor of English from 1910 to 1949 and also Chairman of the English Department.

Courses in English

During the academic year 1957-58 the following courses were given: General Education 17, 18a and English 11, 12, 13a, 104, 107a, 110, 113, 122b, 127b, 150b.

Courses in English are classified under the following headings:

- I Composition
- IIA Literature, Surveys and Other General Courses
- IIB Literature, Special Periods or Individual Authors
- III Public Speaking and Dramatics

<i>Course number</i>		<i>Classification</i>
11	I	Composition
12	III	Public Speaking
13a	IIA	Literature, Surveys, etc.
16b	I	Composition
19b	I	"
101b	IIB	Literature, Special Periods, etc.
104	IIB	" " " "
105	IIB	" " " "
107a	IIB	" " " "
110	IIB	" " " "
111	IIA	Literature, Surveys, etc.
113	IIB	Literature, Special Periods, etc.
117b	IIB	" " " "
121a	III	Public Speaking
122b	IIB	Literature, Special Periods, etc.
126a	IIB	" " " "
127b	IIB	" " " "
142b	IIA	Literature, Surveys, etc.
150b	IIA	" " "

I. COMPOSITION

11. Composition and Literature.

The purpose of English 11 is to develop clarity and accuracy in reading and writing and to introduce the student to the various types of literature. Open to freshmen. STAFF

16b. Creative Writing.

Projects in the writing of expository prose, narrative fiction, the one-act play and verse. MR. LETENDRE

19b. Intermediate Composition.

Further training in the basic principles of composition. Attention is given word choice, sentence and paragraph structure, and organization. Exposition is emphasized. Individual conferences.

MRS. CUNNINGHAM

IIA. LITERATURE: SURVEYS AND OTHER GENERAL COURSES

13a. Introduction to Poetry.

Required of English majors.

MR. CARTER

General Education 17. Great English and American Writers.

See "General Education" immediately preceding the alphabetical list of "Departments and Courses."

111. A Survey of American Literature.

MR. HABER, *first semester*

MR. LETENDRE, *second semester*

142b. The English Novel to Thomas Hardy.

MRS. CUNNINGHAM

150b. Senior Survey.

Required of English majors in the senior year. MR. ANDERSON

IIB. LITERATURE: SPECIAL PERIODS OR INDIVIDUAL AUTHORS

101b. Chaucer.

MR. ANDERSON

104. Milton and the Seventeenth Century.

[Not offered 1958-59]

MR. CARTER

105. Eighteenth Century.

MR. CARTER

107a. English Literature from Beowulf to
1600 (exclusive of drama).

[Not offered 1958-59]

MR. ANDERSON

110. Victorian Literature.

[Not offered 1958-59]

MR. BEARD

113. Shakespeare and the Elizabethan Drama.

[Not offered 1958-59]

MR. ANDERSON

117b. Literature of the Romantic Period.

MR. HASTINGS

122b. Modern Poetry.

[Not offered 1958-59]

MR. LETENDRE

126a. Modern British and American Drama.

MR. LETENDRE

127b. Modern Continental Drama.

[Not offered 1958-59]

MR. LETENDRE

III. PUBLIC SPEAKING

12a. Public Speaking.

The course will be repeated in the second semester. Permission of the instructor required.

MR. BORRNER

121a. Persuasive Speaking and Conference Techniques.

Permission of the instructor required.

MR. BORRNER

Department of Fine Arts

(Art and Music)

ASSISTANT PROFESSOR COWARDIN, ASSISTANT PROFESSOR RAFFMAN,
ASSOCIATE PROFESSOR AFFILIATE GRAZIANI, AND VISITING LECTURER

VEY

With the cooperation of Associate Professor Nicol, Associate Professor Barlow, and Associate Professor Edwards.

The Department offers two programs for a major in Fine Arts. One is intended for those interested primarily in the history of art. The other is designed to provide sound training in fundamentals for qualified students whose principal interest is the practice of art.

History of art. Specific requirements for the major in history of art may be had upon application to the Department.

All courses in the history of art make use of the collections of The Worcester Art Museum. In addition at least one trip per semester is required to museums in the Boston area.

Practice of art. The major in the practice of art is offered jointly by the University and the School of the Worcester Art Museum. It aims to provide, within the framework of a liberal arts program, a solid preparation for specialized study or practice in

any of several branches in the field of art. Students selecting this program take thirteen courses at the University (which must satisfy the general requirements for the bachelor's degree and must include Fine Arts 11 and General Education 14), and seven courses at the Museum School. These are distributed over the four-year college period as follows:

	Clark	Museum School
Freshman year	4	1
Sophomore year	4	1
Junior year	3	2
Senior year	2	3

Candidates for admission to Clark University who wish to elect the major in practice of art should each submit, along with the application form, a portfolio of about a dozen representative pieces of work in drawing, painting, design, etc., which should be clearly marked with the candidate's name and address.

Courses in Fine Arts

During the academic year 1957-58 the following courses in Fine Arts were given: 11, 12b, 16, 111, 191a, 199.

11. An Introduction to Western Art.

Lectures during the first four weeks deal with general topics such as design principles and technical procedures. The remainder of the course treats significant works of architecture, sculpture, and painting in the light of their time. Open to freshmen. New students not admitted in the second semester.

MR. COWARDIN

111. Basic Drawing and Painting.

Introduction to the drawing or depiction of objects in the field of vision; theory and practice in the statement of line, form, light and shade, and perspective. Study of the nature and use of materials and instruments; exercises from objects and from living models; observation of method and accomplishment found in museum collections. Open to freshmen majors and to a limited number of non-majors with the permission of the instructors. Nine hours of studio work per week at the Worcester Art Museum. Indivisible.

MR. GRAZIANI AND MISS MURPHY

12b. A Survey of Western Painting.

General problems of pictorial expression are treated as well as the historical aspects of style. Open to freshmen. May not be counted in addition to Fine Arts 11. MR. COWARDIN

15. Art of the Renaissance in Italy.

MR. COWARDIN

16. Art of the Seventeenth and Eighteenth Centuries.

[Not offered 1958-59]

MR. VEY

191a. The Art of the Ancient Near East and India. [Not offered 1958-59]

MR. COWARDIN

192a. The Art of China and Japan.

MR. COWARDIN

199. Advanced Painting and Design.

General designation for all courses at the School of the Worcester Art Museum above the elementary level. Ordinarily open only to majors in the practice of art.

STAFF OF THE MUSEUM SCHOOL

Courses in Music

During the academic year 1957-58 the following courses in Music were given: 12a, 12b, 13a, 14b.

12a. Introduction to Music.

The essential elements of musical construction. Prerequisite for all other courses in music except 15b. MR. RAFFMAN

12b. The Baroque and Classical Periods. [Not offered 1958-59]

A stylistic survey of the 17th and 18th centuries.

MR. RAFFMAN

13a. Twentieth Century Music.

MR. RAFFMAN

13b. Romantic Music.

The 19th century.

MR. RAFFMAN

14b. Problems in Theory.

[Not offered 1958-59]

The application of theoretical principles to analysis and composition. Prerequisite: permission of instructor.

MR. RAFFMAN

15b. Keyboard Music.

Musical construction and style as seen through the medium of the keyboard. May be substituted for but not credited in addition to 12a.

MR. RAFFMAN

Freshman Orientation Course

Orientation. A required non-credit course for freshmen. Two periods per week are required for the first half of the first semester and one period per week is required for the remainder of this semester. Additional class periods are planned during the second semester to discuss the selection of a major field of study.

Orientation: the history and nature of the university; liberal and vocational education; the curriculum; the individual in relation to the institution, the staff and fellow students; the library; reading; note taking; methods of study; examinations; etc.

DEAN HUGHES AND DEAN BORGER

Physiology of Sex.

DR. BOYNTON AND DR. KRESSLER

Geography

PROFESSOR VAN VALKENBURG,* PROFESSOR MURPHY,† PROFESSOR LOUGEE, PROFESSOR WARMAN, INSTRUCTOR BURNHAM, VISITING PROFESSOR RAISZ, VISITING PROFESSOR CAROL,‡ VISITING LECTURER ANSTEY, VISITING LECTURER MILLER, VISITING LECTURER ESTALL, TEACHING ASSISTANT PRESTON

A complete statement of the organization and special requirements in the Graduate School of Geography will be found in an earlier section of the catalog under the heading "The Graduate School of Geography."

UNDERGRADUATE PROGRAMS

Undergraduates planning to major in geography or to enter graduate work in geography are urged to consult the geography staff early in their undergraduate course in order to plan suitable programs which will include the essential courses in related fields.

Majors in geography are required to take seven year-courses, or the equivalent, in geography and related fields. At least four, and not more than five, of these courses must be in geography.

* Absent on leave first semester 1957-58.

† Absent on leave second semester 1957-58.

‡ Appointed 1958.

Geography 10, Principles of Geography, is usually taken in the freshman year; or, as early as possible after the selection of Geography as a major. One or two of the following courses may be taken during the sophomore year: Geography 12a, Geography 16, Geography 191.

Such courses as 25b, 28a, and regional courses should not be undertaken until the junior or senior years. Juniors of superior standing and seniors may take, by special permission, number "2" geography courses, such as 201, 20b, 282b, 283b, 285a, 285b.

COURSES IN FIELDS RELATED TO GEOGRAPHY

Geography majors should plan their work in related fields so that the basic courses prerequisite to the advanced courses of the junior and senior years are taken in the freshman and sophomore years.

Subjects in Group A (Science and Mathematics) strongly recommended by the staff are geology and biology. However, where special interest is expressed in physics, chemistry, psychology, or mathematics, the student's program can be planned to include these subjects.

Related fields are found listed under Group B (Social Science). General Education 14 is recommended for the freshman year. Courses recommended for the sophomore year are: Economics 11, Government 15, History 12, Sociology 11. More advanced work in the fields of sociology, international relations, psychology, and philosophy will depend largely upon the individual student's interests.

HONORS

A junior or senior pursuing an "honors program" in geography is afforded an opportunity to associate with other students in the Graduate School of Geography. For example, a superior student, after petitioning and receiving approval of the College Board and the Secretary of the Graduate Board, may undertake Advanced Cartography; Physiography of the Western Hemisphere; Soils; Land Use; Climatology; Problems of Economic Geography; and some graduate regional courses. On rare occasions an undergraduate student has been invited to participate in the Fall Field Camp of the Graduate School.

Independent honors projects are under the personal supervision of one of the staff specialists. Such research work must be completed within the semester in which it is started, or proof advanced that the study warrants more time. The staff also conducts an oral examination to ascertain the achievement of an "honors student."

The Alpha Sigma Chapter of Gamma Theta Upsilon, national geography fraternity, provides professional and social affiliations between graduate and undergraduate geography majors.

Courses in Geography

During the academic year 1957-58 the following courses were given:* 10, 12a, 16, 191, 28a, 201, 282b, 283a, 283b, 285b, 291, 30, 32, 34, 36, 37a, 37b, 311, 314, 361, 385b, 391a, 399a.

PRIMARILY FOR UNDERGRADUATES

10. Principles of Geography.

Physical phases of geography and application of principles of geography to selected regions. Open to freshmen. Juniors and seniors admitted only by special permission of the instructor.

MR. WARMAN

12a. Introduction to Climatology.

Practical exercises in meteorology and climatology, use of weather instruments, discussion of various theories. Prerequisite: Geography 10 or equivalent.

MR. WARMAN

16. Economic Geography.

The world's mineral, plant and soil resources with special reference to use and conservation. Prerequisite: Geography 10 or Economics 11, or equivalent.

MR. CAROL

191. Cartography and Graphics.

Preparation of maps, graphs, charts, block drawings. Restricted to twenty, see instructor.

MR. BURNHAM

* Course 16 given by Mr. Preston in 1957-58.

Course 201 given second semester only in 1957-58.

Course 32 given second semester only in 1957-58.

Course 34 given by Mr. Anstey in 1957-58.

Course 36 given second semester by Mr. Estall in 1957-58.

Course 311 given by Mr. Miller in 1957-58.

Course 361 given first semester only in 1957-58.

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

20b. Geography in Education.

Geography in the present day school system; designed to meet needs of those teaching or expecting to teach geography.

MR. WARMAN

25b. Conservation of Natural Resources.

[Not offered 1958-59]

28a. Geography of New England.

Field and lecture course. Prerequisites: Geography 10 and Geology 12.

MR. LOUGEE

201. Political Geography.

Major political problems of the world as related to geographic factors and applied to selected regions.

MR. VAN VALKENBURG

282b. Regional Geography of Anglo-America.

MR. LOUGEE

283a. Regional Geography of Middle America.

MR. WARMAN

283b. Regional Geography of South America.

MR. WARMAN

285a. Regional Geography of Asia.

MR. VAN VALKENBURG

285b. Regional Geography of Europe.

[Not offered 1958-59]

MR. VAN VALKENBURG

286b. Regional Geography of Africa.

MR. CAROL

291. Cartography.

MR. BURNHAM

298. Map and Aerial Photograph Interpretation.

MR. RAISZ

PRIMARILY FOR GRADUATE STUDENTS

30. General Seminar.

Required of all graduate students in residence.

STAFF

32. Regional Climatology.

MR. VAN VALKENBURG

33a. Soils Geography.

Development, character, distribution and economic significance of soils.

34. Land Utilization and Planning.

Physical and cultural factors bearing on purposes and patterns of land use.

MR. CAROL

36. **Problems in Economic Geography.**
Various research fields, research methods, and detailed techniques in mining, agriculture, manufacturing and transportation. MR. MURPHY
37. **Human and Cultural Geography.**
Distribution of races, artifacts, institutions, cultures; the mutual interaction of physical and cultural geographic impactors applied to regions. MR. WARMAN
- 39b. **Presentation Techniques of Geographic Material.**
For prospective teachers. Non-credit course.
MR. VAN VALKENBURG AND MR. WARMAN
300. **Ph.D. Seminar.** MR. VAN VALKENBURG
311. **Geographic Aspects of Hydrology.**
314. **Regional Physiography of the Western Hemisphere.**
[Not offered 1958-59]
Two hours lecture and two hours laboratory. MR. LOUGEE
315. **Regional Physiography of the Eastern Hemisphere.**
Two hours lecture and two hours laboratory. MR. LOUGEE
- 333b. **Biogeography.**
Geographical significance of character, function, distribution, and relationships of plant and animal forms and societies.
352. **Geography of American Agriculture.**
Changing and changed patterns, including map revisions and most recent graphic materials.
361. **Urban Geography.**
The modern city from the geographic viewpoint, with emphasis on the American city. MR. MURPHY
- 385b. **Geography of British Isles.** [Not offered 1958-59]
MR. ESTALL
391. **Cartographic Presentation of the Geographical Landscape.**
MR. RAISZ
- 399a. **Field Methods and Studies.**
The first three weeks of the first semester. Required of every graduate student not yet admitted to candidacy. STAFF





RESEARCH COURSES

- 200. Geography in Education.
- 310. Physiography.
- 320. Climatology.
- 330. Soils and Biogeography.
- 340. Land Use.
- 350. Agricultural Geography.
- 360. Economic Geography.
- 370. Human Geography.
- 380. Regional Geography.
- 390. Political Geography.

Department of Geology

MR. LINGNER

The Department of Geology does not at present offer an undergraduate major. The general course is closely related to geography and is usually required for majors in that department. The laboratory, located on the top floor of the Geography Building, is well provided with illustrative material, including displays of minerals and rocks from classic central Massachusetts localities.

Courses in Geology

During the academic year 1957-58 the following course was given: 12.

12. General Geology.

Presents the earth's surface as a result of the work of streams, glaciers, vulcanism, wind, and other geologic agents. Elementary map interpretation and the identification of common rocks and minerals are included. Emphasis in the second semester is on the evolution of landscapes and life through geologic time. Open to freshmen. Three hours of laboratory

work or a field trip per week, with one all day trip in the second semester. Field trips are at the student's expense. Indivisible course. MR. LINGNER

121a. Introductory Mineralogy.

The identification of minerals by their geometric, physical, and chemical properties. Includes elementary crystallography. Two afternoon meetings weekly. MR. LINGNER

122b. Economic Geology.

A study of the major useful mineral deposits, their origin, structural relations, and geographic distribution.

MR. LINGNER

Department of German

PROFESSOR ARNDT,* ASSOCIATE PROFESSOR EDWARDS, VISITING
ASSISTANT PROFESSOR HIRSCHBACH

DEPARTMENTAL OBJECTIVES

The Department of German offers a program of courses having a fourfold objective: 1, facility in the use of the German language (11, 12, 13, 132); 2, a comprehension of the outstanding cultural epochs in German history (141); 3, an integrated knowledge of major German writers and thinkers (152, 153, 162, 165); 4, an understanding of American and German relations in the past and present (200). Concentration in German as the mother tongue of Central European geographical areas, provides an indispensable background for an intelligent understanding of American interests in Europe, for work in international relations, and in most scientific fields.

MAJORS

Each major in the Department will be required to complete certain extra-curricular reading assignments given in a departmental reading list designed to aid the student in reaching the fourfold objective outlined above. All students wishing to major in German should see the head of the department before they register.

* Absent on leave, 1957-58.

EXTRA-CURRICULAR ACTIVITIES

The department sponsors the following organizations:

THE GERMANIC SOCIETY, an organization of students which provides an informal meeting ground for all those interested in the German language and culture. Its programs are regularly announced on the bulletin board and in the student newspaper.

DELTA PHI ALPHA, a chapter of the national honorary German fraternity. Outstanding students of German who have demonstrated their interest in the German language and culture may be invited to become members of the fraternity upon the nomination of the department.

Courses in German

During the academic year 1957-58 the following courses were given:* 11, 12, 13, 152, 161b, 165a.

11. Introductory German.

The regular first year course in German meeting three hours a week through the academic year. Study of pronunciation, vocabulary, elements of grammar, composition and reading of suitable modern German prose. Indivisible course.

MR. ARNDT, MR. EDWARDS

12. Intermediate German.

The regular second year course in German meeting three hours a week through the academic year. Review of first year grammar, translation from and into German, exercises in written and oral composition, reading of modern German prose. Prerequisite: German 11 or two years of high school German. Indivisible course.

MR. ARNDT, MR. EDWARDS

13. Advanced German Reading.

The regular third year course in German meeting three hours a week through the academic year. This course completes the undergraduate language requirement in German. In the first semester: reading of advanced German prose. In the second semester students will be introduced to the reading of contemporary scientific and literary German journals and newspapers. Prerequisite: German 12.

MR. ARNDT, MR. EDWARDS

* Courses 11, 12, 161b, 165a given by Mr. Hirschbach in 1957-58.

132. Oral and Written German.

Practice in writing German letters, study of modern prose as a basis for practice in the oral use of the language. May be offered to complete language requirement in German. Prerequisite: German 12.

141. Germanic Civilization.

An illustrated lecture course in English on the literature, history, and the fine arts of the German lands from the Holy Roman Empire to the present day, with special stress laid upon the Reformation, the Age of Enlightenment and the Classical Period.

MR. EDWARDS

152. German Literature I.

[Not offered 1958-59]

A survey of German literary movements from the earliest times to the end of the Classical Period. Alternates with course 153.

MR. ARNDT

153. German Literature II.

A survey of German literary movements from the beginning of the Romantic Period to the present. Alternates with course 152.

MR. ARNDT

161b. The German Lyric.

[Not offered 1958-59]

MR. ARNDT

162a. Faust.

Goethe's *Faust* (both parts) as the highest poetic development of the Faust legend.

MR. ARNDT

165a. Modern German Drama.

The German drama from 1880 to the present.

MR. ARNDT

200b. German Seminar.

For German majors in their senior year. The work of the seminar will vary from year to year according to the needs of the students.

MR. ARNDT

Department of History, Government and International Relations

PROFESSOR LEE, PROFESSOR JORDAN, PROFESSOR HAYDEN, ASSOCIATE PROFESSOR COHEN, ASSOCIATE PROFESSOR RAEFF,* MR. GROB, AND VISITING LECTURER ZIMMERMAN

UNDERGRADUATE WORK

In its undergraduate program the department gives basic courses in the fields of American, European, and British history, American and European government, and international relations. It offers major programs in history or government, and participates in the interdepartmental programs of International Relations and American Civilization.

General Education 14 must be taken as early as possible by all majors in the department. Other courses primarily for undergraduates may be elected by non-majors who have not previously taken G.E. 14; and courses for advanced and graduate students may be taken by non-majors with the permission of the instructor if in his judgment the student has an adequate background for the course. Majors will normally take Economics 11 as well as G.E. 14 before the end of the sophomore year. Majors in government will normally take Government 15 before the end of the sophomore year. Further elections in this and related departments are determined by the major's special interests, but are expected to include at least two upper class courses in this department. History 205a and b is required of all majors in the department.

GRADUATE WORK

The distinctive feature of the graduate work is the emphasis laid upon individual instruction and guidance by means of informal conferences between instructor and student, small classes, and seminars. The principal fields of graduate study are American, English and European history and politics, modern diplomacy, and the international relations of the United States, Europe, the British Empire and the Far East.

* Absent on leave, 1957-58.

The program for the degree of Master of Arts is worked out individually with each student who may choose to concentrate upon history, or government, or international relations. All are required to take the departmental seminar (History 30a). For general requirements, see the announcement of the Graduate School.

For the degree of Doctor of Philosophy, which may be taken in history or international relations, each student must choose six fields of study to be agreed upon as early as possible in the first year of residence beyond the M.A., and after a conference between the student and the departmental staff. By the end of the same year the student is expected to have completed satisfactorily two of his fields, either by course work or by passing a three-hour written examination in each; and to complete, normally by enrollment in a seminar or similar course, a task of research and writing. In the second year beyond the M.A., or later, the student must complete the remaining four fields, one or two by course or written examination, and the others by an oral examination. This final step constitutes the "preliminary examination" required by the Graduate Board. For language and other requirements, see the announcement of the Graduate School concerning the doctorate.

The doctoral dissertation, written in one of the six fields which is designated as the special field, must be submitted in complete preliminary draft to the supervising instructor not later than March 1 of the year in which the candidate hopes to receive the degree. The final examination for the doctorate tests the candidate's expert knowledge of his special field as well as the relation of his dissertation to it.

International Relations. The procedures toward advanced degrees in this subject are the same as those outlined above. Candidates are expected, however, to take work in economics and geography as part of an integrated program to be arranged by the department in consultation with the other departments concerned.

Courses in History

During the academic year 1957-58 the following courses were given: General Education 14, History 12b, 205a, 205b, 21b, 212, 225a, 23b, 230, 234a, 274b, 30a, 314a, 331.

PRIMARYLY FOR UNDERGRADUATES

General Education 14. Europe and the United States since 1500.

For a complete description of this course, see General Education. Required of all majors in the department.

12. History of England.*

Constitutional history is emphasized particularly in the first semester.

MR. JORDAN

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

201b. Intellectual History of Europe, 1700-1900.

MR. RAEFF

205a. Introduction to Political Philosophy.

A study of the main trends of Western political thought with reference to their underlying social, political and economic realities. Required of all departmental majors.

MR. JORDAN

205b. Recent Political Thought.

The conflicting ideologies of our time in their development since the French Revolution. Required of all departmental majors.

MR. JORDAN

21b. Foundations of Modern Europe.

[Not offered 1958-59]

The later medieval and the Renaissance periods.

MR. LEE

212. Europe, 1789-1914.

Mainly concerned with political and international developments.

MR. LEE

22b. Tudor and Stuart England.

[Not offered 1958-59]

MR. JORDAN

225a. Recent History of the British Empire.

[Not offered 1958-59]

Developments and problems since 1900.

MR. JORDAN

23b. Senior Conference in American Civilization.

Required of all seniors majoring in American Civilization. Readings, papers and discussions will help the students review and integrate their course work in this field.

MR. GROB

* The history since 1688 was given in 1957-58 as 12b.

230. Social and Intellectual History of the United States.

Beginning with a brief survey of the European background of American ideas and institutions, this course deals with the main currents in American thought and society from colonial times to the present.

MR. GROB

234a. American Diplomatic History.

[Not offered 1958-59]

From 1776 to about 1941.

MR. HAYDEN

235a. The United States in the Twentieth Century.

[Not offered 1958-59]

MR. GROB

236a. American Political History, 1828-1877.

Beginning with the election of Jackson, this course will emphasize the development of American political parties, Jacksonian democracy, sectionalism, expansionism, the Civil War, and Reconstruction.

MR. GROB

274b. The Modern Far East.

[Not offered 1958-59]

Primarily international relations in the region since 1895.

MR. HAYDEN

281a. History of Russia from Peter the Great to the Soviet System.

MR. RAEFF

282b. History of the Soviet System.

MR. RAEFF

283a. Historical Development of Eastern Central Europe.

[Not offered 1958-59]

MR. RAEFF

284a. Topics in Eastern European History.

[Not offered 1958-59]

MR. RAEFF

PRIMARYLY FOR GRADUATE STUDENTS

30a. Department Seminar.

Introduction to bibliography and methods of research. Required of all first-year graduate students in the department.

MR. LEE AND THE STAFF

314a. European International Relations, 1870-1918.

MR. LEE

331. Problems in the History of the United States.

Individual research topics, supplemented by readings and discussion in the field of United States history.

MR. GROB

GRADUATE READING AND THESIS COURSES

- | | | |
|-------------|---|------------|
| 31. Reading | } In the History and International Relations of Europe. | MR. LEE |
| 310. Thesis | | |
| 32. Reading | } In the History and International Relations of England and the British Europe. | MR. JORDAN |
| 320. Thesis | | |
| 33. Reading | } In the History of the United States. | MR. GROB |
| 330. Thesis | | |
| 38. Reading | } In early Modern and Slavic History. | MR. RAEFF |
| 380. Thesis | | |

Courses in Government

During the academic year 1957-58 the following courses were given: Government 14, 15, 240, 25a, 253b, 341, 351.

PRIMARILY FOR UNDERGRADUATES

14. International Relations.

A survey of world politics since 1914, with emphasis on the shifting patterns of power and the rise of new nations and revolutionary doctrines. The second semester deals mainly with the Second World War and later events.

MR. HAYDEN
Assisted by MR. HESS

15. Introduction to American Government.

A short survey of the theories of the origin and purpose of the state is followed by a study of American government with emphasis on contemporary problems of the federal government.

MR. COHEN
Assisted by MR. RAND

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

240. Seminar in International Relations.

Group study of recent and current ideas for the international relations major; open as an elective only with the instructor's permission.

MR. HAYDEN

241. International Law and Organization.

First semester: the historic principles of international law and their application in the modern world. Second semester: the institutions created to deal with problems of commerce, welfare, and collective security on an international basis.

MR. HAYDEN

25a. Comparative Government.

[Not offered 1958-59]

The governments and politics of Great Britain and the major European powers.

MR. COHEN

251a. American Political Parties.

American party organizations, pressure groups, and the electorate in American politics, with emphasis on current problems and trends in the field.

MR. COHEN

252b. Introduction to Public Administration.

[Not offered 1958-59]

An examination of the role of administration in modern government, including problems of personnel administration, fiscal management, administrative regulation and government organization.

MR. COHEN

253b. Municipal Government and Administration.

[Not offered 1958-59]

MR. ZIMMERMAN

254b. American Constitutional Law.

The role of the Supreme Court in the development of policy examined primarily by the case method. Contemporary problems are emphasized.

MR. COHEN

PRIMARYLY FOR GRADUATE STUDENTS

History 30a. Department Seminar. See courses in History.

341. Problems in International Relations.

MR. HAYDEN

351. Problems in American Government.

MR. COHEN

GRADUATE READING AND THESIS COURSES

34. Reading**340. Thesis**

} In International Relations

MR. HAYDEN

35. Reading**350. Thesis**

} In American and Comparative Government and Politics.

MR. COHEN

Interdepartmental Majors

See announcements, p. 98.

International Relations

See the announcements of the Department of History, Government and International Relations, *above*, and of Interdepartmental Majors, p. 98.

Department of Mathematics

PROFESSOR BUMER, ASSOCIATE PROFESSOR STUBBE, ASSOCIATE PROFESSOR GORENSTEIN,* ASSISTANT PROFESSOR HAYDEN, ASSISTANT PROFESSOR WATSON

UNDERGRADUATE WORK

The Department of Mathematics offers courses leading to an undergraduate major in mathematics, courses necessary for the study of the physical and certain social sciences, and courses for the student who wishes to learn about the fundamental concepts of mathematics primarily for their cultural value.

Five year courses in mathematics and two year courses in an allied field of study are required for a major in mathematics. Courses 11, 12, 13, 14a, 214 form the basis of a major. If a student shows by attainment test that he is qualified to do so, he may enter Mathematics 12, omitting Mathematics 11.

GRADUATE WORK

The department offers advanced courses leading to the degree of Master of Arts with the program designed to give the student an understanding of the basic concepts of the major fields of

* Absent on leave, 1957-58.

mathematics and to fit him for further work in the subject if his talents warrant it.

The offerings should provide the student with the essential training in mathematics needed for positions in the scientific laboratories of government and industry and should be of great value to teachers.

The program for the degree of Master of Arts satisfies the requirements stated in the announcement of the Graduate School. A reading knowledge of one foreign language is required of candidates.

Graduate scholarships and assistantships are available.

Courses in Mathematics

During the academic year 1957-58 the following courses were given: * Mathematics 11, 12, 13, 17, 214, 215, 216, 220a, 221.

PRIMARILY FOR UNDERGRADUATES

11. Fundamentals of Mathematics.

An elementary study of mathematical logic, postulational systems, algebra, point sets, analytic geometry, the concept of function, trigonometric functions, natural numbers, cardinal number, the concept of limit and some brief attention to elementary probability and statistical inference. MR. BUMER AND MR. HAYDEN, with the assistance of MISS KASPARIAN AND MR. MAURAI.

12. Calculus.

An introduction to differential and integral calculus, this course is essential to further work in mathematics as well as to work in applications in the natural and social sciences. Prerequisite: Mathematics 11, or its equivalent.

MR. STUBBE, MR. GORENSTEIN, AND MR. HAYDEN

13. Intermediate Calculus.

Geometric and physical applications of integration, sequences and series, three-dimensional analytic geometry, partial differentiation, multiple integrals and a brief introduction to differential equations. Prerequisite: Mathematics 12.

MR. STUBBE

* Course 11 given by Mr. Stubbe, Mr. Hayden, and Mr. Watson in 1957-58. Courses 12, 13, 214 given by Mr. Watson in 1957-58.

14a. Differential Equations.

Ordinary differential equations with applications to geometry, physics, chemistry, and mechanics. Prerequisite: Mathematics 12.
MR. STUBBE

14b. Differential Geometry.

Elements of the metric geometry of curves and surfaces in Euclidean space developed by methods of calculus and analytic geometry extended to three dimensions. Prerequisite or taken concurrently: Mathematics 13.
MR. STUBBE

17. Mathematical Statistics.

[Not offered 1958-1959]

Elements of probability theory, frequency distribution test of significance, large and small sampling, analysis of variance. Prerequisite: Mathematics 12.
MR. BUMER

General Education 110. Fundamental concept of mathematics.

For description of this course, see courses listed under General Education.

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

214. Advanced Calculus.

Topics selected from among partial differentiation, integration, infinite series, improper integrals, Fourier series, integral transform and the calculus of variations. Prerequisite: Mathematics 13.
MR. BUMER

215. Modern Algebra.

An introduction to the theory of groups, rings, integral domain, fields, vector spaces, matrices and related topics. Prerequisite: Mathematics 12.
MR. STUBBE

216. Functions of a Complex Variable.

Analytic functions, line integrals, conformal mapping, Riemann surfaces. Prerequisite or taken concurrently: Mathematics 214.
MR. BUMER

218. Functions of a Real Variable.

Foundations of the real number system, algebra of sets, transfinite arithmetic, metric spaces, topological spaces, sequences and series, measure theory, differentiation and integration, functional analysis. Prerequisite or taken concurrently: Mathematics 214.
MR. HAYDEN

219. Projective Geometry.

Synthetic and analytic projective geometry, including the projective theory of conics. Prerequisite: Mathematics 12.

MR. GORENSTEIN

220b. Boundary Value Problems of Mathematical Physics.

The solution of boundary value problems, especially those of heat conduction and the wave equation by Fourier series, spherical harmonics, Bessel functions and other orthogonal developments.

MR. STUBBE

221. Topology.

Point set topology, metric spaces, dimension theory, introduction to algebraic topology.

MR. HAYDEN

222. Topics in Analysis.

Content will be changed from year to year to fit the needs of graduate students.

STAFF

223. Topics in Algebra.

Content will be changed from year to year to fit the needs of graduate students.

STAFF

Department of Philosophy

ASSOCIATE PROFESSOR BECK, ASSISTANT PROFESSOR CLIVE

The Department of Philosophy offers courses designed to broaden the student's perspective and help him trace the relations among the various fields of knowledge. These courses may also form the basis of a major in philosophy.

A major in this department consists of four courses in philosophy and three additional courses in related fields. The specific courses in related fields are determined in the light of the student's special interests.

Courses in Philosophy

During the academic year 1957-58 the following courses were given: 11a, 11b, 12, 13a (now 15a), 13b, 14a, 16a (now 17a), 16b (now 17b).

11a. Logic and Scientific Method.

The principles of valid reasoning and inductive methods; the application of these principles and methods to the problems of the natural and social sciences; and the consideration of the relation between logic and problems of value. Open to freshmen.

MR. BECK

11b. Problems of Philosophy.

The nature and method of philosophy. The application of philosophical method to contemporary personal and social problems. A detailed analysis of some typical problems in the various fields of philosophy. Open to freshmen.

MR. BECK

12. History of Philosophy.

The movements of philosophical thought from the early Greeks to the present day. First semester: Greek and Medieval Philosophy. Second semester: Modern Philosophy. Not open to freshmen. Prerequisite for second semester: One half-course in philosophy or G.E. 14.

MR. CLIVE

13a. Problems of Ethics.

Important ethical theories. Designed to acquaint the student with the problems and scope of ethics, and to aid him in the formulation of an ethical outlook. Open to juniors and seniors.

MR. BECK

13b. Philosophy in Literature.

Man—his nature, relationship to himself, to others, and to God, his values and self-understanding—in continental literature since the late nineteenth century. Philosophical issues to be raised include causation in historical explanation, the emergence and meaning of nihilism, the dynamics of faith and unbelief, the phenomenology of estrangement and loneliness, and the nature of art. Authors studied: Tolstoi, Dostoyevsky, Mann, Kafka, and Camus. Open to juniors and seniors. Prerequisite: One half-course in philosophy.

MR. CLIVE

14a. Social Philosophy.

[Not offered 1958-59]

The principles underlying social structure and functions. The examination of the goals, purposes, norms, and ideals of social process, and the relation of that process to the individual good. Open to juniors and seniors.

MR. BECK

15a. Philosophy of Religion.

Perennial themes such as the nature of man, the existence of God, literalism versus imagination, and the meaning of providence in history. Readings focused on classics of the Judaeo-Christian tradition with a fair selection from twentieth-century existential and analytic writers. Open to juniors and seniors. Prerequisite: One half-course in philosophy. MR. CLIVE

16. Contemporary Philosophy.

Important thinkers representative of modern developments in philosophy, together with emphasis on the historical roots of their thought. Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor. MR. BECK

17a. Readings in Ancient Philosophy. [Not offered 1958-59]

Advanced work in the writings of one or more of the important philosophers of the ancient period. Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor. MR. CLIVE

17b. Readings in Modern Philosophy. [Not offered 1958-59]

Advanced study of representative thinkers of the modern period. Prerequisite: One and one-half courses in philosophy, including Philosophy 12; or permission from the instructor. MR. CLIVE

Education 290b. Philosophy of Education.

Described in the announcement of the Department of Education.

Department of Physics

PROFESSOR ROOPE, ASSOCIATE PROFESSOR GUNTER, RESEARCH
ASSOCIATE SHELEG

UNDERGRADUATE WORK

The department offers fundamental courses required in preparation for the study of chemistry, biology, meteorology and allied sciences, medicine, dentistry, engineering and science teaching, as well as courses leading to professional or graduate work in physics.

The requirement for a major in physics consists of Physics 11, two courses from Physics 15, 16, 17, 124, either Physics 22 or 23, Mathematics 11 and 12, and Chemistry 11. In addition, electives in physics, mathematics and chemistry are desirable. Students preparing for graduate work should also obtain a good reading knowledge of French and German while in college.

Physics 11 or its equivalent is the normal prerequisite for all other courses in the department. Courses numbered 15 or higher, except 17 and 124, require the use of calculus and should not be elected without consulting the instructor in charge. Courses 15, 17 and 23 each require a limited amount of laboratory work to be done at the discretion of the instructor and at such times as will not interfere with regularly scheduled courses.

GRADUATE WORK

Students whose records are approved by the department may be admitted by the Graduate Board to work leading to the degree of Master of Arts.

Courses in Physics

During the academic year 1957-58 the following courses were given: General Education 10, Physics 11, 15, 16, 17, 23, 27.*

PRIMARILY FOR UNDERGRADUATES

General Education 10. An Introduction to Physical Science.

For description of this course see courses listed under General Education.

* Given as Physics 25 in 1957-58.

11. **General Physics.**
Mechanics, heat, electricity and magnetism, wave motion, sound, and light. Indivisible course. Open to freshmen.
MR. GUNTER
13. **History of Physics.**
Offered irregularly.
MR. ROOPE
15. **Heat and Thermodynamics.** [Not offered 1958-59]
Thermometry, calorimetry, the thermal properties of matter in the solid, liquid and gaseous states, the laws of thermodynamics, applications to a wide range of phenomena. Prerequisites: Physics 11 and Mathematics 12.
MR. ROOPE
16. **Optics.** [Not offered 1958-59]
First semester, geometrical optics and its application to various optical instruments. Second semester, principles and application of physical optics. Prerequisites: Physics 11 and Mathematics 12 (may be taken concurrently).
MR. GUNTER
17. **Introduction to Modern Physics.**
An elementary treatment of physical experiment and theory of the past sixty years including the more recent atomic and nuclear developments.
MR. ROOPE
124. **Fundamentals of Electronics.**
First course in electronics designed to give a broad, largely non-mathematical, background for the understanding of electron tubes and their associated circuits. The application of modern electronic devices to the fields of physics, chemistry, biology, meteorology, and navigation is discussed. Prerequisite: Mathematics 11.
MR. GUNTER

FOR ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS

22. **Theoretical Mechanics.**
Prerequisite: Mathematics 12. Mathematics 13 is desirable but not required.
MR. ROOPE
23. **Electricity and Magnetism.** [Not offered 1958-59]
The fundamental laws of electric and magnetic circuits and fields, and the elements of electromagnetic wave propagation and their application to antenna design. Prerequisites: Physics 11 and Mathematics 12. Mathematics 13 is desirable but not required.
MR. GUNTER

24. **Advanced Electronics.**
A detailed theoretical study of certain electronic phenomena from a mathematical point of view. Prerequisites: Mathematics 12 and Physics 124 or Physics 23. Mathematics 13 is desirable but not required. Offered irregularly. MR. GUNTER
27. **Basic Electrical Measurements.**
Measurement of voltage, current, frequency, power, capacitance, inductance, resistance, etc., from D.D. to microwave frequencies. Prerequisites: Mathematics 12, Physics 23, Physics 24 or equivalent. MR. SHELEG
- 28a. **Theoretical Spectroscopy.**
The origin of line and band spectra in both emission and absorption spectrophotometry. Prerequisites: Physics 11 and Mathematics 12 (may be taken concurrently). Physics 16 and 17 are desirable but not required. MR. GUNTER
- 28b. **Experimental Spectroscopy.**
Theory and applications of the optical and electrical instruments used in an experimental spectroscopy, and the principles of spectrochemical analysis. Laboratory practice in the use of prism and grating spectrographs, micro-densitometers, interferometers, and their associated photographic and electrical techniques. Prerequisites: Physics 16 or Physics 28a, and Mathematics 12 (may be taken concurrently). Physics 17 is desirable but not required. MR. GUNTER
25. **Honors Course.**
Theoretical and/or experimental work in mechanics, thermodynamics, or nuclear physics. MR. ROOPE
26. **Honors Course.**
Theoretical and/or experimental work in optics, electronics, or spectroscopy. MR. GUNTER
29. **Topics in Advanced Optics.**
Theoretical and experimental aspects of topics selected from the following: spectroscopy, polarimetry, communications theory, diffraction theory, lens design, and electro-optics. Prerequisites: Mathematics 13 and Physics 16. Physics 23 is desirable but not required. MR. GUNTER
217. **Nuclear Physics.**
MR. ROOPE

PRIMARILY FOR GRADUATE STUDENTS

31. Theoretical Physics.

Double course.

MR. ROOPE

300. Research in Experimental Physics.

STAFF

301. Research in Theoretical Physics.

STAFF

Department of Psychology

PROFESSOR WERNER, PROFESSOR WAPNER, PROFESSOR AFFILIATE PHILLIPS, PROFESSOR AFFILIATE WEINREB, ASSOCIATE PROFESSOR BAKER, ASSOCIATE PROFESSOR CROCKETT, ASSOCIATE PROFESSOR DEMBO, ASSOCIATE PROFESSOR GWINN,* ASSOCIATE PROFESSOR KAPLAN, ASSOCIATE PROFESSOR WIENER, ASSISTANT PROFESSOR COMALLI, ASSISTANT PROFESSOR DIBNER, ASSISTANT PROFESSOR KRUS, ASSISTANT PROFESSOR LEVENTHAL, ASSISTANT PROFESSOR AFFILIATE WINDER, LECTURER BIBACE, LECTURER GOODGLASS, LECTURER KOELLA, LECTURER LIPTON, LECTURER RAEFF,† LECTURER VARJABEDIAN, PSYCHIATRIC CONSULTANT MORIARTY, PSYCHIATRIC SOCIAL WORK CONSULTANT DEWEESE

The Psychological laboratories at Clark University were established by G. Stanley Hall immediately after the founding of the University, and constituted one of the first adequately appointed laboratories in this field in America. These laboratories increased rapidly in size and in research possibilities for experimental psychology, and have been remodeled in accordance with present needs. From the outset this research emphasis on experimental psychology was supplemented by work in child study, educational psychology, and mental hygiene. In recent years a comprehensive training program in clinical psychology has been added. Broad integrated training in psychology is stressed, with special concentration being provided in the areas of child and genetic, clini-

* Absent on leave, first semester 1958-59.

† Absent on leave 1957-58.

cal, social, and general experimental psychology; also in experimental approaches to personality and psychopathology.

Associated with the Department is the Institute of Human Development, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on pre- and post-doctoral levels in the comparative developmental approach to behavior.

UNDERGRADUATE WORK

The undergraduate curriculum is designed to meet the needs of: (1) students majoring in psychology; (2) majors in related fields; (3) students wishing an orientation to the field of psychology for general cultural development.

Psychology 11a and 11b are prerequisite to all subsequent courses. Majors are required to take Psychology 11a, 11b, and Psychology 212. Students preparing for graduate work should obtain a reading knowledge of French and German.

GRADUATE WORK

Work is offered in the department leading to the degrees of Master of Arts and Doctor of Philosophy. In order to be admitted to the department for a graduate degree, the applicant must have a bachelor's degree, based upon a distinguished college record. Where the department feels that a student lacks the necessary undergraduate preparation in psychology and related fields, specific courses of study will be prescribed.

THE DEGREE OF MASTER OF ARTS. To qualify for the degree of Master of Arts in psychology the student must demonstrate competence in representative areas of psychology. The customary program is five courses, including experimental psychology, statistical methods, and three additional courses supplemented by the writing of a thesis in the area of special interest.

THE DEGREE OF DOCTOR OF PHILOSOPHY. Only students who give evidence of high scholastic attainments will be encouraged to proceed to the degree of Doctor of Philosophy. The obtaining of a Master of Arts degree does not automatically admit the student to

the doctoral program. The general requirements for the doctor's degree, other than those for specialization in clinical psychology, include the following. The student is required to pass with distinction four courses during the first year of graduate study and a minimum of four courses during the second year of study. He is required at the end of the second year to demonstrate his competence in psychology by passing with distinction preliminary examinations in the field of psychology as a whole and in an area of specialization. At the present time examinations in the general field include history and systems of psychology, experimental psychology, genetic psychology, learning, normal and abnormal personality, social psychology, physiological psychology, and statistics. In addition, the student is required to demonstrate his ability to conduct independent research as evidenced by the presentation of an acceptable thesis. For formal dissertation requirements and language requirements, see the general statement concerning advanced degrees in the section of this catalog headed "The Graduate School." At a final oral examination a student is required to defend his dissertation and to show his competence in the general field of psychology and in his special area of concentration.

THE PROGRAM IN CLINICAL PSYCHOLOGY. The department offers a four-year program in clinical psychology leading to the degree of Doctor of Philosophy. For this degree the same standards of proficiency in the general field of psychology as mentioned above apply.

In addition the student will be required to demonstrate mastery of the use of clinical methods. Provision is made for a wide variety of practical experiences in cooperating institutions, clinics and agencies.

One to two years of internship, or its equivalent, is included in this four-year program. Institutions and agencies cooperating in providing practicum and research facilities are: Bradley Home, Bedford V.A. Hospital; Boston State Hospital; Boston V.A. Hospital; Boston V.A. Mental Hygiene Clinic; Brockton V.A. Hospital; Children's Medical Center, Boston; Clark University Psychological Clinic; Hartford V.A. Mental Hygiene Clinic; Judge Baker Guidance Center, Boston; Lowell V.A. Mental Hygiene Clinic; Northampton V.A. Hospital; Providence V.A. Mental Hygiene Clinic; Rutland Heights V.A. Hospital; Springfield V.A. Mental Hygiene Clinic; Worcester V.A. Mental Hygiene Clinic; Worcester

Youth Guidance Center; and the Worcester State Hospital. Internships may be arranged in other selected hospitals and clinics. V.A. and U.S. Public Health Service Training Stipends are available for outstanding students.

During the first two years the student will include in his program courses basic to a thorough understanding of psychology as well as specialized courses in clinical psychology. He will be required to take the regular preliminary examinations; in this case the examination in the area of specialization will be in clinical psychology.

Research for the dissertation should normally be completed during the fourth year at the University. The length of the program will vary depending upon individual circumstances.

Courses in Psychology

During the academic year 1957-58 the following courses were given: * 11a, 11b, 103b, 150a, 170, 172a, 201a, 202b, 209, 212, 300, 301, 303, 305, 307, 308a, 309b, 313, 315a, 318, 320, 330b, 331, 333, 336, 339a, 340b, 350, 390.

PRIMARILY FOR UNDERGRADUATES

11a. General Psychology.

An introduction to the principles of human behavior.

MR. WAPNER

11b. General Psychology.

Prerequisite: Psychology 11a.

MR. WAPNER

103b. The Abnormal Personality.

The development of the abnormal personality and a survey of the major types of abnormal behavior. Prerequisite: Psychology 172a.

MR. BAKER

150a. Introduction to Child Psychology.

MRS. RAEFF

152b. Psychology of Adolescence.

The development of personality during adolescence with special emphasis on personality changes of the adolescent in a modern urbanized culture. Prerequisite: Psychology 11a and 11b.

MRS. RAEFF

* Course 150a given by Mr. Dibner in 1957-58.

170. Social Psychology.

The role of social factors in the behavior of individuals and of groups. Among the topics to be discussed are attitudes, prejudice, leadership, and personality and culture.

MR. CROCKETT

172a. Personality Development.

The various theoretical approaches to the study of personality, with particular emphasis on trait theories, typologies, field theory, and psychoanalysis. Also considered are the determinants of personality development and methods of appraising personality. Prerequisites: Psychology 11a and 11b.

MR. BAKER

FOR ADVANCED UNDERGRADUATES AND
GRADUATE STUDENTS

201a. Learning and Motivation.

The role of learning and motivation in behavior.

MR. WIENER AND MR. GWINN

202b. The Psychology of Thinking.

Types of thought processes and methods of investigating them, with emphasis on concept formation, imagination, creative thought, reasoning, and problem solving.

MR. GWINN

209. Developmental and Child Psychology.

Prerequisite: Psychology 11a and 11b plus one additional semester course in psychology.

MR. WERNER

212. Experimental Psychology.

A general survey of experimental psychology with the aim of acquainting the student with scientific methods and laboratory technique. Lecture 2 hours; Laboratory 3 hours.

MR. WAPNER

PRIMARILY FOR GRADUATE STUDENTS

300. Genetic Psychology.

A seminar course.

MR. WERNER AND MR. KAPLAN

301. Clinical Assessment I.

Problems and methods, with field work.

MR. LEVENTHAL

302. Advanced Psychological Diagnosis of Children.

Special problems and case studies.

STAFF

303. **Clinical Assessment II.**
Advanced course in diagnostic methods and field work.
MR. GOODGLASS
304. **Concept and Method in Psychological Measurement.** STAFF
305. **Advanced Experimental Psychology.**
In the first semester attention will be given to problems of perception, and in the second semester to memory, concept formation, and reasoning. Lecture 2 hours; Laboratory hours to be arranged.
MR. WERNER AND MR. WAPNER
306. **Seminar in Research Methods.**
MR. WERNER, MR. KAPLAN, AND MR. WAPNER
307. **Participation in Psychological Clinic.**
MR. BAKER, MR. PHILLIPS, MR. LEVENTHAL,
MR. WEINREB, AND MR. WIENER
- 308a. **Psychopathology.**
Major pathological syndromes and their conceptualization.
MR. LIPTON
- 309b. **Theories of Psychotherapy.**
Basic theories of psychotherapy as they relate to practical approaches to patients.
MR. WIENER
313. **Statistical Methods.**
The understanding and practice of the statistical methods most valuable in psychological research. MR. CROCKETT
- 315a. **Experimental Methodology and Design.**
Special reference is made to the problems of research planning and experimental design. Various fields will be drawn upon for illustrations.
MR. WAPNER
318. **Personality.**
Problems in personality theory and a comparison of various theoretical approaches.
MR. WIENER
320. **Social Psychology.**
Problems and theoretical systems. MR. CROCKETT
- 330b. **Genetic Psychology of Symbolic Behavior.**
A seminar on the basic aspects of symbolic behavior in humans.
MR. KAPLAN

331. The Psychology of Learning.

Theoretical viewpoints and experiments in the field of learning. MR. GWINN

333. Personality Evaluation.

An advanced course in the integration of methods of personality diagnosis and case history materials. MR. PHILLIPS

336. Advanced Problems in Psychotherapy.

Offered only to advanced clinical graduate students who are engaged in psychotherapy. Discussions of psychotherapeutic problems and theory in connection with case material.

MR. WEINREB

338a. Clinical Neurophysiology.

Neurophysiological functions as they pertain to human behavior. LECTURER TO BE ANNOUNCED

339a. History and Systems of Psychology.

[Not offered 1958-59]

The historical development of psychological methods, concepts, and theories. MR. GWINN

340b. Physiological Psychology.

[Not offered 1958-59]

Physiological mechanisms underlying psychological processes. MR. GWINN

349. Clinical Research Methodology.

Current research methods in clinical psychology. STAFF

350. Research in Psychology.

Individual direction of students in their research projects. STAFF

390. Departmental Colloquium.

VISITING LECTURERS

NON-CREDIT WORKSHOPS

1. Advanced Workshop in Psychological Statistics.

Selected problems in small sample theory.

VISITING LECTURERS

2. Workshops in Clinical Methodology.

VISITING LECTURERS

3. Workshop in Neuropsychology.

Problems concerning neurological correlates of behavior.

VISITING LECTURER

Department of Romance Languages

PROFESSOR REID, ASSOCIATE PROFESSOR NICOL, ASSOCIATE PROFESSOR KING,* ASSISTANT PROFESSOR BARBERA,† VISITING ASSISTANT PROFESSOR INSERNI, MR. DANIELSON, MR. SELLIN.‡

The department offers courses in the languages and literatures of France, Spain and Spanish America. These courses fall into two groups: a lower level and an upper level. French and Spanish 11 and 12 are lower level courses. All other Romance language courses are considered as upper level courses.

In the lower level the primary aim is the mastery of the skills of communication in a language, with a view to its effective use for a variety of possible ends. These skills include reading, writing, speaking and understanding.

In the upper level the primary aim is an acquaintance in depth with a foreign civilization, principally through a study of its literature, but with attention also to other aspects of its culture and to the further perfection of linguistic competence. The courses in literature are complemented by others in civilization and in advanced composition, conversation and phonetics.

In addition to the primary function of providing liberal education, a well planned sequence of courses in this field will serve the practical ends of providing a foundation for teaching, a reading knowledge adequate for advanced study in natural science, social science or the humanities, or a speaking and writing knowledge adequate for use in foreign travel or foreign trade.

A major in Romance languages must comprise:

- 1) Four full courses to be chosen from the following:

French 13, 114, 123a, 151a, 152a, 153b, 154b.

Spanish 13, 114.

Romance Languages 124b.

- 2) French 113 or the equivalent.

* Absent on leave, 1958-59.

† Absent on leave, 1957-58.

‡ Appointed 1958.

3) General Education 14, or the equivalent, normally to be completed by the end of the sophomore year.

4) At least one course, to be approved by the department, in non-Romance literature.

Students majoring in Romance languages are expected to acquire a thorough knowledge of either French or Spanish and are urged to acquire a competent knowledge of the other, both in language and in literature.

If at least two units of elementary Latin or elementary Greek have not been accepted for admission to college, a Romance language major must satisfy the classics requirement as prescribed under the heading "Major" in the statement of requirements for the degree of Bachelor of Arts.

Students intending to major in Romance languages should consult Mr. Reid.

A program leading to a degree "with honors in Romance languages" is available to qualified upperclassmen.

Courses in French

During the academic year 1957-58 the following courses were given: General Education 18b and French 11, 12, 13a, 14, 113, 114, 123a, 151a and 154b.

11. Elementary.

A course for beginners, including the elements of grammar and pronunciation, graded readings, and exercises in speaking and writing simple French. Open to freshmen. Indivisible course.

STAFF

12. Intermediate.

A review of grammar, exercises in composition and conversation, intensive and extensive reading. Prerequisite: French 11 or the equivalent, to be determined by a placement test. Open to freshmen. Indivisible course.

STAFF

*13. Oral and Written French.

A third-year course. Admission is subject to approval of the instructor in each semester. The normal sequence is 13A

* See footnote on page 189.

during the spring semester of one year, followed by 13B the following fall semester. The two parts of the course are organized as follows:

A^b.

[Not offered 1958-59]

Analytical study and practice of the elements of communication in French: basic conversation patterns; the sound, rhythm and tone patterns of French pronunciation; review of grammatical topics; exercises in written expression. Conducted in French. Prerequisite: Grade of B— or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Open to freshmen. Offered in the spring semester in alternate years. Two regular meetings and one two-hour laboratory period each week.

MR. REID

B^a.

Advanced practice of communication in French. Composition, oral reports, classroom discussion. Conducted in French. Prerequisite: French 13A^b, or equivalent skill, to be determined by a placement test. Not open to freshmen. Offered in the fall semester in alternate years. Two regular meetings and one two-hour laboratory period each week.

MR. NICOL

*14. Readings in French Literature.

A third-year course. The emphasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in French. The emphasis in the second semester is on an understanding of a number of novels and plays selected for their literary excellence and broad appeal. Prerequisite: French 12 or the equivalent, to be determined by a placement test. Open to freshmen.

MR. NICOL, MR. DANIELSON

113. Introduction to French Civilization. [Not offered 1958-59]

A selective survey of the history, art, literature and music of France, from the Middle Ages to modern times. An elementary knowledge of French is desirable but not required. Ad-

* Courses 13 and 14 are "third-year" courses within the meaning of the foreign language requirement for the degree of Bachelor of Arts. Course 14 is offered to meet the needs of the general student; course 13 is designed primarily for the student with particular interest and aptitude for language study, who intends to take subsequent courses in literature. Both may be taken for credit.

mission is subject to the approval of the instructor. May be counted in fulfillment of the general requirement in art, music and literature, but not toward fulfillment of the requirement in foreign language. Offered in alternate years. MR. NICOL

114. General View of French Literature.

An interpretation of the main currents of French literature. Each period is studied by concentrating attention on a limited number of works and authors best bringing to focus the characteristics of the period. Prerequisite: Grade of B— or higher in French 13 or 14, or the equivalent. MR. KING

123a. Advanced Language.

[Not offered 1958-59]

An introduction to the problem of stylistics with a study of selected grammatical topics. Conducted in French. Prerequisite: Grade of B— or higher in French 13B or the equivalent. Offered in alternate years. MR. NICOL

***151a. The Middle Ages and the Renaissance.** [Not offered 1958-59]

Emphasis is upon developing an understanding of the philosophical, religious and social attitudes of the Middle Ages and the Renaissance, with due attention to the facts of literary history. Conducted in French. Prerequisite: Grade of B— or higher in French 114, or the equivalent. Offered in alternate years. MR. KING

***152a. Classicism.**

A study of outstanding literary works, drawn principally but not exclusively from the age of Louis XIV, to illustrate the esthetic and intellectual nature of the classical point of view as it persists in the French thought of various periods. Conducted in French. Prerequisite: Grade of B— or higher in French 114, or the equivalent. Offered in alternate years. MR. NICOL

***153b. Romanticism and Realism.**

A study of outstanding literary works, drawn principally but not exclusively from the late 18th and 19th centuries, to il-

* For French 151a, 152a, 153b and 154b a certain historical and analytical perspective such as is provided by French 114 is presupposed. These courses are planned so that they need not be taken in chronological order, but may be taken at the student's convenience. Attention is given to the social forces and movements underlying the attitudes whose literary manifestations are under study.

illustrate the esthetic and intellectual climates and the literary techniques generally described as romantic or realistic. Conducted in French. Prerequisite: Grade of B— or higher in French 114, or the equivalent. Offered in alternate years.

MR. NICOL

***154b. The Modern Period.**

[Not offered 1958-59]

A study of a few outstanding dramatists, novelists and poets to illustrate the highly varied literary attitudes characteristic of 20th century French literature. Conducted in French. Prerequisite: Grade of B— or higher in French 114, or the equivalent. Offered in alternate years.

MR. NICOL

Romance Languages 124b. Comparative French and Spanish Phonetics.

The elements of general phonetics. A detailed study of the pronunciation of French and Spanish. Prerequisites: Grade of B— or higher in French 13A or Spanish 13; elementary knowledge of the other language. Advised for majors who plan to teach either language. Offered in alternate years.

MR. REID

Courses in Spanish

During the academic year 1957-58 the following courses in Spanish were given:† 11, 12, 14, 114 and 154b.

11. Elementary.

A course for beginners, including the elements of grammar and pronunciation, graded readings, and exercises in speaking and writing simple Spanish. Open to freshmen. Indivisible course.

STAFF

12. Intermediate.

A review of grammar, exercises in composition and conversation, intensive and extensive reading of texts dealing with Spain and Spanish America. Prerequisite: Spanish 11 or the equivalent, to be determined by a placement test. Open to freshmen. Indivisible course.

STAFF

‡14. Readings in Spanish and Spanish-American Literature.

A third-year course. The first semester is devoted to Spanish-American, the second semester to Spanish works. The em-

* See footnote on page 190.

† Courses 114, 154b given by Mr. Inserni in 1958-58.

‡ See footnote on page 189.

phasis in the first semester is on reading as communication, with analysis and practice of the techniques of effective reading in Spanish. The emphasis in the second semester is on the understanding of a number of major works of the literature of Spain. Prerequisite: Spanish 12 or the equivalent, to be determined by a placement test. Open to freshmen.

MR. REID

114. The Literature of Spain.

[Not offered 1958-59]

A general view of Spanish literature with emphasis on the origins and development of the novel and drama, culminating in the masterworks of the nineteenth century. Attention is given to political and cultural background. Prerequisite: Grade of B— or higher in Spanish 13 or 14, or the equivalent. Offered in alternate years.

MR. BARBERA

154b. Panorama de la Literatura Española Contemporánea.

[Not offered 1958-59]

Readings, lectures and discussions of the leading literary figures and ideas in contemporary Spain. Conducted in Spanish. Prerequisite: three years of college Spanish or the equivalent.

MR. INSERNI

***13. Oral and Written Spanish.**

A third-year course. A rapid intensive review of grammar; the elements of phonetics; exercises in composition and pronunciation; conversational practice. Conducted in Spanish. Admission is subject to the approval of the instructor. Prerequisite: Grade of B— or higher in Spanish 12, or equivalent skill in the language, to be determined by a placement test. Open to freshmen. Offered in alternate years. Two regular meetings and one two-hour laboratory each week.

Romance Languages 124b. Comparative French and Spanish Phonetics.

For description see under "Courses in French."

* See footnote on page 189.





Directory of Students

1957-58

Names of students are grouped in three lists:

- I (1) — graduate students, undergraduate students and special students in attendance during the regular academic year 1957-58;
- I (2) — those who were in attendance less than one semester;
- II — those who attended the 1957 Summer School.

Explanation of letters and symbols:

S — Scholar (graduate)	G — geography
F — Fellow (graduate)	H — history, government, and international relations
58, 59, 60, 61 — undergraduates	M — mathematics
g — students formally admitted to the graduate school	Ph — physics
s — special students	Ps — psychology
B — biology	* — student in residence during the first semester only
Ch — chemistry	† — student in residence during the second semester only
Ec — economics and sociology	
Ed — education	

State omitted—Massachusetts.

I (1). GRADUATE STUDENTS, COLLEGE STUDENTS AND SPECIAL STUDENTS IN ATTENDANCE DURING THE REGULAR ACADEMIC YEAR

Name	Home Address	Class	Name	Home Address	Class
Aareskjold, Helen V., Brooklyn, N. Y.		60	Bergman, Howard S., W. Hartford, Conn.		60
Aaronson, Anthony E., Worcester		59	Berman, Mrs. Davida E., Worcester		58
Abdow, George T., Worcester		Ec g	Berman, Sylvia N., Marlboro		61
Abisamra, Philip J., Worcester		61	Berthiaume, Gerald F., Auburn		58
Adams, David G., Jaffrey, N. H.		61	Billings, Kenneth J., Webster		61
Adams, Margaret W., Glens Falls, N. Y.		61	Billman, John M., Harrisburg, Pa.		H S
Adler, Helena A., Buenos Aires, Argentina		61	Bisceglia, Albert A., Shrewsbury		59
*Agafonoff, Alexander, Balgowlah, Australia		Ec F	Blomstrom, Peter C., Cranston, R. I.		61
Aharonian, Carol I., Auburn		61	Bloomberg, Morton A., Swampscott		58
Ahearn, William E., Wassaia, N. Y.		60	Bodansky, Margery, New York, N. Y.		Ps g
Ahlstrom, Alice S., Worcester		59	Bogigian, Robert A., Worcester		Ed g
Akerlund, Jane A., Worcester		59	Bogucki, Raymond F., Worcester		Ch F
Albert, Alice A., Great Neck, N. Y.		61	Bohigian, Theodore A., Worcester		60
Aldin, Peter, New York, N. Y.		Ps g	Bolan, Richard J., Worcester		60
Aldis, Thomas L., Worcester		59	Boliver, Lillian B., Shrewsbury		59
†Allen, Mrs. Ann I., Worcester		Ed g	Bolotin, Michael H., Mattapan		58
†Almasian, Rosalie, Whitinsville		61	Borst, Schuyler V., Schenectady, N. Y.		61
†Almgren, Ruth M., Worcester		61	Bosshard, Anne M., Worcester		60
Altman, Charles S., Clinton		59	†Bostic, Mrs. Corrine E., Worcester		61
Amnot, James R., Danvers		59	Boswell, Yvonne M., Arlington, Va.		60
†Andersen, Carl E., Worcester		Ev	Boudreau, Norman J., Gardner		58
Andersen, Neil R., West Boylston		60	Bouffard, Norman A., Worcester		59
Anderson, Ralph W., Jr., Worcester		59	Bowen, Marshall E., E. Providence, R. I.		59
Anderson, Richard L., Worcester		58	Boyd, Ernest B., Worcester		59
†Argento, Barry J., Worcester		Ed g	Boyle, Mary-Ellen C., Worcester		58
Aron, Arlene L., Providence, R. I.		Ps F	†Bracani, Donald R., Leominster		59
Aronson, Jay R., Brooklyn, N. Y.		59	Bradford, Roger R., Worcester		Ec g
Aselton, Donald M., Leicester		60	Bradley, Joseph F., Bolton		61
Aslanian, Audrey M., Worcester		59	Brassard, Raymond J., Barre, Vt.		58
*Avila, Nidia, Panama, Panama		G S	Breen, George J., Worcester		60
Babbidge, Theresa G., Worcester		Ed g	*Breen, Jane C., Shrewsbury		Ed g
Backstrom, Frances G., Worcester		Ed g	*Bridgham, Mrs. Elin V., Paxton		Ed g
*Bailey, Bryan A., Gardiner, Me.		59	Brockman, Michael D., Brooklyn, N. Y.		58
†Baker, Joyce A., South Yarmouth		Ed g	Brodsky, John, Yonkers, N. Y.		59
†Ball, Charlotte L., Boylston		Ed g	Brodsky, Stephen E., Bridgeport, Conn.		60
*Balsamo, Salvatore R., Worcester		61	Brotherton, Lynda B., Worcester		58
Barker, Rosalind F., Forest Hills, N. Y.		58	*Brouwer, John F., New London, Conn.		59
Barrett, William F., Hopedale		60	Broverman, Donald M., Worcester		Ps g
Barry, Richard D., Gardner		58	Broverman, Mrs. Inge K., Worcester		Ps S
Barton, Neil M., New York, N. Y.		58	Brown, Addison S., Brunswick, Me.		58
Bastille, Arthur J., Worcester		59	Brown, Donald F. J., Portland, Me.		58
Bates, Richard A., Shrewsbury		59	*Brown, Edward V., Caldwell, N. J.		59
Bean, Clayton R., Stratham, N. H.		58	Brown, Stephen K., Shrewsbury		61
Bedrosian, Peter, Milford		60	Brown, Walter M., Southampton		58
Beedle, Norman E., Gardiner, Me.		60	Brunelle, Richard L., West Brookfield		60
Behrman, Joseph S., Great Neck, N. Y.		58	Bryant, Charles R., Worcester		60
Beller, Henry K., New York, N. Y.		61	Bryson, Carl J., New York, N. Y.		58
Benjamin, David S., Worcester		60	Buchholz, Michele A., New Rochelle, N. Y.		58
*Benuskavich, Daniel J., Worcester		58	*Buckley, Robert R., Brattleboro, Vt.		60
Berger, Peter L., New Haven, Conn.		60	Bureau, Paul E., Fitchburg		60
			Burner, Charles E., Worcester		Ed g
			Burnham, John P., Manset, Me.		H S

Name	Home Address	Class	Name	Home Address	Class
Burr, Helen R., Moorestown, N. J.		61	†Coté, Gustave C., Woonsocket, R. I.		Ec g
Burstein, Donald E., New York, N. Y.		G g	Coupe, John D., Worcester		Ec F
Buscone, Louis J., Jr., Milford		59	Courtney, Richard J., Worcester		Ev
Byron, Anne E., Templeton		58	Craig, Marcia L., Whitinsville		58
			†Crandall, Faye E., Worcester		Ed g
Cain, Frank W., Auburn		59	Crane, Norman C., West Boylston		59
Caldow, George D., Fitchburg		61	Cremer, Herbert S., Stow		61
Caloccia, Ernest M., Worcester		58	Crockett, Mrs. Helen C., Worcester		s
Calverley, David S., Auburn		60	Cronan, John F., Auburn		60
Cameron, Bernard J., Worcester		58	*Crooks, Cynthia A., North Brookfield		60
Campaniello, Joseph P., Worcester		61	Cullen, Charles G., Worcester		M g
Canty, Jane A., Worcester		60	Cundall, Patricia A., Sterling Jct.		59
Cariglia, Joseph J., Worcester		58	*Currier, Gable L., Leicester		59
Carlin, Richard T., Tarrytown, N. Y.		60	Curtin, Thomas A., Bellows Falls, Vt.		58
Carlson, A. Richard, Worcester		61	Cuti, Vincent J., Jr.,		
Caron, Henri L., Leominster		58	Huntington, L. I., N. Y.		60
Carr, Douglas D., Warren		58			
Carroll, Eileen K., Worcester		60	Dachs, Caroline, Jamaica, N. Y.		61
Carstens, Mary M., Old Bridge, N. J.		61	*Daigle, Patrick R., Gardner		60
Casey, Thomas M., Lebanon, N. H.		Ps S	Damico, Anthony P., Hudson		58
Cashman, John W., Worcester		59	Dargie, Bernard R., Worcester		59
Cassidy, James J., Jr., Millbury		60	Davidson, Gordon H., Worcester		61
Cedargren, Carl J., Jr., Emporium, Pa.		59	Davis, Beverly, Providence, R. I.		60
Cha, Chung Hwa, Seoul, Korea		59	†Davis, Dorothy M., Worcester		Ed g
Chakour, Mitchell G., Jr., Worcester		s	Davis, Harold E., Camden, N. J.		Ec S
Champoux, Ralph W., Jr., Worcester		59	Davis, James E., Marlboro		60
Chapman, Curtis L., Worcester		59	Davison, Raymond R., West Brookfield		61
Chase, Carole E., West Boylston		59	*Decoteau, Theodore J., Northboro		s
Chase, Cynthia E., West Boylston		59	Deedy, Catherine E., Westfield		61
Check, Maxine H., New York, N. Y.		60	Degen, Sharon L., Meriden, Conn.		60
Cheng, Yuan-Hao, Taiwan, China		Ec S	Degrandpre, Charles A., Jaffrey, N. H.		58
Christofferson, Allen M., Jr., So. Acton		61	D'Elia, Herbert C., Worcester		58
Christopher, Peter R., Worcester		59	D'Elia, Mrs. Margaret A., Worcester		Ed S
Church, Mildred W., Princeton, N. J.		60	*Delmarle, Perry T., Jr., Worcester		59
Civen, Sherman B., Brookline		59	Denardo, Richard S., Waterbury, Conn.		59
†Clark, John P., Easthampton		H g	Denechaud, Virginia M., Worcester		Ev
Clark, Kenneth A., Roxbury		61	Denny, Duncan, Norfolk, Conn.		Ed g
Clarke, Alice E., Worcester		60	DeProspro, Ernest R., Jr., Worcester		59
Clarke, Eleanor R., Worcester		61	Desmarais, Robert N., Worcester		M g
Clarkson, Frank E., Worcester		Ps F	Devoe, Anthony M., S. Plainfield, N. J.		60
Clarkson, Harry E., Lincoln, R. I.		60	Diamantopoulos, Michael P., Worcester		60
Cleveland, R. Lance, Sterling Jct.		61	†Dickinson, Porter S., Fitchburg		59
Cocchiarella, John P., Milford		60	Dickman, Michael B., Brooklyn, N. Y.		60
Cocchiola, Ronald C., Bridgeport, Conn.		58	DiDomenico, Angelo, Milford		61
Coghlin, Judith, Worcester		s	DiGregorio, Carl J., Milford		59
Cohen, Bernard N., Kew Gardens, N. Y.		61	Dion, Rev. Louis F., Worcester		Ed g
Cohen, Jerrold P., Worcester		60	Dircks, William J., Worcester		Ec S
Cohen, Leah A., Brooklyn, N. Y.		60	DiStefano, Frank J., Jr., Shrewsbury		59
Cole, Bruce L., Worcester		58	Doiron, Roger J., Chisholm, Me.		59
Colebrook, Elizabeth A., Boylston		61	Dolphin, Donald H., Worcester		60
Collins, George M., Milton		58	Donabedian, Richard K., Worcester		58
†Condon, A. Gerald, Worcester		61	Donaghue, John A., Wethersfield, Conn.		60
Connelly, John Jr., Wakefield		61	Donais, Harriet E., Easthampton		61
Connolly, Vincent F., Worcester		M g	Doon, John A., Worcester		H S
Cook, Edward W., E. Hartford, Conn.		59	Doran, Mary A., Holliston		Ch g
Cooke, Charles R., Everett		59	Douce, Hermon L., Jamaica, B.W.I.		Ed S
†Coons, Charles E., Pittsfield		61	*Dowden, Vera M., Worcester		H S
*Corinaldi, George V., Jamaica, N. Y.		G S	Dowgiert, Paul R., Holden		59

Name	Home Address	Class	Name	Home Address	Class
Downer, Douglas B., Worcester		60	Gascoigne, Ransom M., II, Southbridge		61
Drapos, Alexander E., Worcester		58	Gassaway, Alexander R., Haverford, Pa.		G F
†DuBiel, David H., Lexington, N. C.		G g	Gaudette, Roland F., Jr., Spencer		61
Dufresne, Ernest D., Worcester		60	Gay, George H., Jr., Southboro		59
Dunford, Frederick F., Millbury		59	Gay, Merritt J., W. Scarborough, Me.		60
Dunkin, Barbara G., Milford, Conn.		61	*Genereux, Joanne M., Webster		60
Dupskey, Stephen J., Jr., Leicester		58	Germain, Norman W., Worcester		58
Dwyer, Audley L., Jamaica, B.W.I.		Ed g	Gerner, Edward W., New Hyde Park, L. I., N. Y.		61
Ede, Elwood K., Worcester		60	Geronimo, Clare E., Worcester		59
Eidt, Mildred H., Worcester		60	Gertler, James S., Rego Park, N. Y.		60
Eisenberg, Paul D., Worcester		61	Gertler, Paul, New York, N. Y.		59
Elefterakis, Peter J., Westfield		59	Giannette, Marion F., Worcester		60
Ellefsen, Richard A., Sebastopol, Cal.		G F	†Giannini, Frank D., Auburn		60
Emens, Peter F., Belmont		58	Giannini, Louis D., Auburn		Ec g
Engel, Noel S., Delmar, N. Y.		61	Gillies, Robert B., Oxford		58
Epstein, Mrs. Edith, Haifa, Israel		s	Gillingham, Mary E., Otego, N. Y.		60
Epstein, Martin B., Lawrence, N. Y.		61	Gidding, Judith M., Chester, Conn.		58
Erickson, Carl J., Fitchburg		59	Glanzman, Bertram, Far Rockaway, N. Y.		59
Erickson, Eleanor S., Gardner		58	Glasgow, Jon A., S. Vienna, Ohio		G F
Ericson, Carol K., Worcester		Ed g	Glatzer, Susan D., Rockaway Beach, N. Y.		60
Erle, Richard A., Worcester		Ps g	Glick, Joseph A., Brooklyn, N. Y.		Ps S
†Etre, Mrs. Jeannette C., Worcester		60	Glickman, Melvyn, Worcester		59
Evans, Caroline, Worcester		61	Glodas, Daniel B., Worcester		61
Evers, Jane M., Pleasantville, N. Y.		60	*Glodis, Francis A., Worcester		60
Faber, Bernard L., Franklin		59	Goggin, Adrienne L., Claremont, N. H.		58
Falk, J. David, Leominster		60	Gogol, John M., Westfield		60
Farrell, Anne M., Rumford, Me.		58	Goldberg, E. Susan, Worcester		59
Fein, Jacques, Union, N. J.		60	Goldberg, Stephen R., Revere		58
†Fennimore, Robert C., Worcester		60	Goldman, Lawrence R., Worcester		59
Fine, Arnold M., Worcester		60	Goldschmidt, Paul R., Winthrop		61
*Fingar, William P., Worcester		58	Goldstein, Alan D., Worcester		60
Finster, Joan L., West New York, N. J.		61	Goldstein, Harold M., W. Roxbury		Ec F
Fischer, Martin A., Brooklyn, N. Y.		58	Goldstein, Stephan A., Bellerose, L. I., N. Y.		61
Fisher, Mrs. Rose, Worcester		s	Gooding, Earl N., St. Lucia, B.W.I.		Ed g
Fishlin, Barbara D., Flushing, N. Y.		61	Gordon, Bennett S., Worcester		58
Flaherty, J. Philip, Jr., Worcester		s	Goretti, Sandro, Worcester		58
Flexer, Abraham S., Worcester		59	Graham, Ian K., Marion		61
Flodman, Ronald E., Holden		59	*Granath, Kermit P., Worcester		60
Flower, David A., Worcester		60	Grandone, Roy F., W. Sutton		58
Flynn, John F., Worcester		60	Granger, David R., Leicester		60
Fogg, Dorothy J., Holden		61	Granger, John R., Leicester		61
Foley, Robert J., Flushing, N. Y.		59	Granger, Nancy L., Leicester		60
Foster, Sandra L., Natick		60	Grasso, Barbara A., Waterbury, Conn.		61
Franklin, Jeanne, Allston		Ps g	Graves, E. Page, Worcester		H g
Franks, Linda J., Lawrence		61	Gray, Robert L., Worcester		61
Freccia, Lorenzo L., New York, N. Y.		61	†Green, Phyllis H., Worcester		Ed g
Freedberg, Lois, Worcester		60	Greenberg, Harvey, New Haven, Conn.		60
Frem, Milton H., Worcester		s	Greenberg, Mel L., Worcester		59
Friedman, C. Robert, Worcester		58	Greene, Nancy M., Worcester		61
Friedman, Stuart D., Worcester		59	Grenet, Allen P., New Haven, Conn.		61
Fuchs, Mrs. Gaynell M., Worcester		Ed g	Grey, David P., Brooklyn, N. Y.		60
Gadavani, Vilaichird, Bangkok, Thailand		61	Grigg, Robert L., Southbridge		60
Gajary, Bela F., Budapest, Hungary		60	Gromelski, Bradford A., Barre Plains		60
Gariepy, Roland E., Leominster		59	†Gross, Daniel O., Athol		s
			Groves, Donald E., Worcester		60
			Grube, Linda, Putnam, Conn.		60

Name	Home Address	Class	Name	Home Address	Class
†Guerin, Henry J., Webster		s	Inglessis, Criton G. S., Athens, Greece		Ch g
Gustafson, Richard L., Worcester		Ch F	Intorre, Benjamin J., Brooklyn, N. Y.		Ch F
Gustavson, Edwin A., Worcester		60	Iritani, Toshio, Tokyo, Japan		Ps F
Gustavson, Martin A., Yonkers, N. Y.		58	Isaac, Donald M., Bronx, N. Y.		Ps g
Hachey, Joseph E., Leominster		58	Jablonski, Robert E., Pittsfield		61
Hackendorf, Martin R., Melrose		59	Jablonski, Stephen F., Jr., Webster		58
Hadd, Harry E., Gibbstown, N. J.		Ch g	Jackson, Harold C., Jr., Worcester		58
Hagglund, Richard A., Worcester		58	Jackson, Merrilee A., Watertown, Conn.		58
Hagopian, Miasnig, Worcester		Ch g	Jackson, Kenneth W., Worcester		59
Hagstrom, Conrad W., Millbury		59	Jackson, Paul E., Toronto, Can.		61
Hagstrom, Judith E., Boylston		61	Jackson, Stephen, Worcester		58
Hagstrom, Mrs. Mary F., Worcester		s	Jacobs, Leonard S., Lawrence, N. Y.		61
Hale, William E., Holden		s	Jacobson, Sandra A., Holden		61
Haling, Marie L., Southbridge		60	*Jaffee, Robert, Worcester		s
Hallberg, Carol A., Worcester		59	Jagolinzer, Philip, Cumberland, R. I.		58
Halpern, Lawrence S., Middletown, Conn.		61	James, Herbert I., Bronx, N. Y.		Ch S
Ham, Robert J., Worcester		59	Jarest, Helen B., Townsend		61
*Hammer, Judith L., Wellesley		59	Javery, Milton H., Worcester		s
Hammond, Richard J., Worcester		58	Jay, Helen, Northboro		59
Handleman, Chester, Worcester		H g	Jenkins, Judith A., Albany, N. Y.		60
Hansen, Richard A., Fitchburg		58	Jensen, Walter M., Jr., Worcester		M g
Hardy, Anton G., Manchester, Vt.		Ps g	Johnson, Margery R., Spokane, Wash.		H F
*Harriman, Edward R., Fitchburg		59	Johnson, Philip F., Worcester		60
Harris, Nancy E., Gardner		59	Johnson, Premtina, Worcester		61
Harris, Norman J., Milford		61	Johnson, Roger, Glastonbury, Conn.		60
Harrison, Donald H., Chevy Chase, Md.		61	Johnson, Walter B., Worcester		59
Hart, Frederick R., III, Norwell		59	Johnson, Wayne P., Worcester		60
Hart, Nathan H., W. Cornwall, Conn.		58	*Jontry, Bonnie E., Brooklyn, N. Y.		61
Hartman, Sandra H., Newton, Conn.		60	†Jordan, Edward J., Jr., Hamden, Conn.		Ps g
*Hastings, Andrew D., Jr., Newport, N. H.		G g	*Jordan, Philip R., Toronto, Can.		61
Hasty, Edward H., Jr., Worcester		59	Josephs, Barry S., New Haven, Conn.		59
Hatfield, Colby R., Jr., Leominster		59	Josephy, Leslie, Flushing, N. Y.		59
Haus, Sigismund, Worcester		Ed S	*Julian, Gerald P., Linwood		Ec g
Hayward, Levis W., Jr., Worcester		61	Kabadian, Edward Jr., Worcester		60
Healey, Dorothy J., Worcester		58	Kacandes, Pearl G., Neptune, N. J.		58
Hegedus, Ivor R., Caracas, Venezuela		61	Kagan, Richard A., Medford		58
Heinert, Dietrich H., Berlin, Germany		Ch S	Kajander, Vivian S., Sackville, Can.		Ed S
Heller, Betty G., Mt. Vernon, N. Y.		58	Kallio, Rhoda J., Shrewsbury		60
Henry, Nancy E., Auburn		60	Kallio, Mrs. Signe M., Worcester		58
Hess, Robert P., Fullerton, Pa.		H S	Kaloosdian, Knarig P., Watertown		59
Hickey, Joseph E., Jr., Natick		G F	†Kane, Barbara T., Worcester		60
Higgins, Thomas H., Worcester		59	Kane, Paul W., Long Beach, Cal.		59
†Hill, Norman R., E. Hampton, Conn.		58	Kaplanes, Helen T., Worcester		60
Hillner, Linda R., Clinton		61	*Karagheusian, Carl, Leicester		59
Hoekstra, Ronald, Northbridge		61	Karagosian, John H., Whitinsville		58
Horne, Burton, Waban		60	Karcasinas, Katherine S., Southbridge		61
Hovey, Richard J., Worcester		Ch g	Kardouche, George K., Cairo, Egypt		Ec S
Howard, Millard A., Palermo, Me.		58	Karno, Maartini, Djakarta, Indonesia		G g
Howe, Georgia G., Worcester		58	Kasparian, Cynthia, Whitinsville		60
Huhn, William A., Jr., Worcester		59	Kasparian, Lucy, Saugus		M S
Huka, Elisabeth C., Djakarta, Indonesia		G g	Kasperson, Roger E., Northboro		59
Humphries, Ogretta A., Washington, D. C.		Ps g	Katz, Herman N., Lakewood, N. J.		60
Hunter, Judith, Shrewsbury		61	Katz, Ruth M., Bridgeport, Conn.		59
Hutchinson, Wanda J., Sharon, Conn.		59	*Kazalunas, John, Oxford		s
Hutchinson, William A., Worcester		58	Kazarian, Michael, Worcester		59
Hutton, Doris A., Staten Island, N. Y.		60	Keating, John J., Fitchburg		59
			Keim, David L., Ironia, N. J.		61

Name	Home Address	Class	Name	Home Address	Class
Keith, Stephen G., Monson		59	Langille, James E., Worcester		61
Kelley, Charline M., Petersham		60	Langley, Kay F., Newport, Me.		59
†Kelley, Justin J., Worcester		Ed g	Lapato, John, Berlin, N. H.		58
Kennard, Mrs. Dolores D., Worcester		61	*Lapriore, Gaetano V., Worcester		61
Kennedy, Edward A., Jr., Worcester		Ed g	†Larson, John J., Worcester		59
Kennedy, William A., Worcester		58	Lavent, Burton A., Arverne, L. I., N. Y.		61
Kent, Joyce M., Millbury		58	Lawford, Margaret E., Laughlintown, Pa.		61
Kerxhali, Steven T., Worcester		59	Lazarus, Dorothy, Worcester		61
Kesslen, James M., Haverhill		60	LeBoeuf, Mrs. Janine A., Dudley		59
Kezal, Joseph P., Rumford, Me.		58	Lefebvre, Ronald G., Worcester		59
*Kilbridge, Thomas J., Bridgewater		61	Leinwand, Myrna D., Woodside, N. Y.		60
†Kim, Chung Yum, Seoul, Korea		Ec S	Leonard, Louise R., Shrewsbury		60
Kim, Ha Poong, Seoul, Korea		58	*Les, Frederick J., Clinton		58
†Kim, Sang Kyong, Seoul, Korea		H S	†Levenson, Mrs. Sophie J., Worcester		s
*Kim, Tai Dong, Seoul, Korea		60	Levy, Francine, Paris, France		s, 58
†Kimball, Virginia, Nashua, N. H.		59	Lewandowski, Frances C., Worcester		60
Kinell, Edwin E., Worcester		59	†Lewicke, Mrs. Catherine P., Uxbridge		Ed g
King, Donald A., Berlin, Conn.		Ec S	Liedes, Liisa A., Fitchburg		58
Kirschner, Clifford J., Woodmere, L. I., N. Y.		61	Lightfoot, William I., Hudson		60
Kirshenbaum, Allen M., Providence, R. I.		61	Lillibridge, Christopher, Norwich, Conn.		s
Klein, Judith L., Worcester		59	Lindberg, Bruce A., West Boylston		58
Klein, Stanley D., Westwood, N. J.		Ps S	Lindgren, Richard E., Worcester		59
Klinger, Lawrence A., Bronx, N. Y.		58	Lingner, Robert E., Worcester		G g
Klutey, Frederick E., Jr., Wilmington, Del.		60	Lipnick, Mrs. Rachel L., Hempstead, N. Y.		58
*Knoppel, Lars, Worcester		s	*Lippens, Sandra M., Worcester		61
Koelsch, William A., Williamsport, Pa.		G S	Lisser, Richmond W., Montreal, Can.		61
Kokernak, John F., Worcester		60	†Ljungberg, Doris R., Worcester		Ed g
Koki, Arthur S., Worcester		60	Ljungquist, Ross, Shrewsbury		61
Koliss, John H., Whitinsville		59	Locke, Sandra, Worcester		61
Konfino, Raymond N., Long Beach, N. Y.		61	Lockhart, Robert E., Fitchburg		59
Kontaxopoulou, Desina P. S., Athens, Greece		60	Loewus, Ann Lee, Washington, D. C.		59
Kontio, Sallyann, Townsend		59	Lombardi, Edward J., Methuen		58
Kopeck, Richard J., Worcester		G F	Lonnroth, Nancy M., Shrewsbury		61
Koppetsch, Kurt, Remscheid-Hasten, Germany		61	Loosli, Mrs. Sabina, Worcester		B g
Korstvedt, Arne J., Cambridge		Ps g	Lord, Arthur C., Bridgewater		G S
Kostreba, Anthony J., Palmer		58	Lowe, Roland C., Jr., Ashland		Ps S
Kramarz, Robert M., Whitinsville		60	Lowney, Gerald M., Worcester		59
Kramer, Paul, New York, N. Y.		Ps S	Lubowitz, Mrs. Dolores, Worcester		s
Krauss, Jean C., Norwich, Conn.		60	Lucas, Mrs. Agnes P., Corpus Christi, Tex.		Ed g
Kronberg, George H., Worcester		Ch g	Lundquist, Marilyn B., Holden		61
Kujala, Shirley M., Holden		Ed g	Lundstrom, Robert E., Millbury		59
*Kunawat, Rajnikorn, Bangkok, Thailand		G g	†Luongo, Dona R., Fitchburg		60
Kuniholm, Thor H., Worcester		H F	Lurie, Steven M., Hewlett, N. Y.		61
Kupferman, Allan, Garnerville, N. Y.		B g	Lynch, F. Elizabeth, Marlboro		58
†Kusik, Mairi J., Richmond		58	Lyon, Anthony E., Franklin		60
LaFosse, William D., Fitchburg		60	MacGilvray, Daniel R., S. Portland, Me.		H S
Lahtinen, Allan E., Lunenburg		60	Macklow, Irwin B., Milford		Ed g
*Lajeunesse, Roger L., Putnam, Conn.		58	MacKown, Stuart A., Concord, N. H.		60
*Lamar, Richard M., Osterville		Ed g	MacRae, Theodore N. U., Worcester		59
Lamoureux, Kent B., Worcester		60	Madnick, Ronald C., Worcester		59
†Lane, Caroline, Leicester		Ed g	†Madore, George E., Boylston		G g
Langer, Jonas, New York, N. Y.		Ps S	Magoon, Albra L., Manchester, N. H.		59
Langille, Carolyn M., Worcester		58	Mahoney, Mary E., Concord, N. H.		60
			Mailloux, Thomas R., Gardner		58
			Maki, Roberta E., W. Sterling		58

Name	Home Address	Class	Name	Home Address	Class
Maloney, Patricia A., Worcester		59	Miyazaki, Yukiji,		
Mammo, Mekbib, Harar, Ethiopia		58	Kanagawa-Ken, Japan		Ec S
Mammone, Lucien C., Leominster		s	Moberg, David H., Worcester		58
Mank, Herman L., Jr., S. Ashburnham		60	Moe, Helga E., Delmar, N. Y.		60
Mann, Mrs. Dorothy E., Worcester		61	Moniz, James, Worcester		Ec F
Mann, Stanley J., Ithaca, N. Y.		B S	Mont, George E., Worcester		Ch S
Manthorne, Karen J., Rochdale		61	Montgomery, Robert E., Norwich, Conn.		59
Marcus, Harold G., Worcester		58	Mooney, Robert E., Jr., Worcester		61
Margulis, Stephen T., Bronx, N. Y.		Ps S	*Moore, Mrs. Janet B., N. Grafton		61
Markun, Geraldine, Brookline		59	Moore, Thomas F., Jr., Worcester		58
Marsh, Fredrik A., Petersham		61	†Mooshagian, Madieros, Worcester		Ed g
†Marshak, Mrs. Lois J., Westboro		59	Moossa, Walter F., Holden		58
Martin, Jerome L., Worcester		61	*Moreau, Claudette T., Pawtucket, R. I.		58
Mason, Richard, Worcester		61	†Morin, Gerald J., Auburn		Ed g
Mass, Frederick L., Far Rockaway, N. Y.		60	Morin, Wilfred W., Jr., Millbury		58
†Matsuo, Taku, Fukuoka-Ken, Japan		Ch S	Morrison, Richard A., Saylesville, R. I.		61
Matthew, Andrew B., Jr., Berlin		61	Morrow, Barbara A., Monson		59
Matusaitis, Vida R., Worcester		58	Moscofan, Nancy, Whitinsville		60
Matuszek, John M., Jr., N. Grafton		Ch S	Moule, Elaine D., Auburn		60
Maurais, Henry A., Worcester		M S	Mourginis, Constantine L., Holden		Ed g
Maxham, Mrs. Joan C., Worcester, Vt.		58	Murakami, Yukito, Tokyo, Japan		Ch F
Mayer, Joseph, Brookline		Ps g	Murphy, Michael G., Wethersfield, Conn.		60
Mayo, Mrs. Clara W., Nashua, N. H.		Ps g	Murray, Anne R., Northboro		60
Mays, Lois A., Worcester		58	Murray, Gary R., Worcester		60
McAnern, Richard G., Andover		61	Murray, John P., Nantucket		61
McCabe, Thomas W., Worcester		60	Murray, Mary J., Worcester		61
†McCarron, Paul J., Worcester		Ed g			
McCune, Jay E., Cambridge		60	Nair, Patricia J., New Britain, Conn.		Ps F
McDavid, William R., Charleston, W. Va.		61	Namuj, Marcos Y., Jerusalem, Jordan		59
McElwee, Theodore R., Northboro		60	Nathan, David, Far Rockaway, N. Y.		59
McEwan, Walter S., Elmsmere, N. Y.		61	Navickas, Margaret A., Worcester		60
McFarland, Joseph H., Worcester		Ps F	†Neal, Harry C., Gainesville, Tex.		G S
McGurren, Jane A., Worcester		58	*Neary, Jean A., Newton		Ed g
McKey, Richard H., Jr.,			Nelson, Charles H., Worcester		60
Wonalancet, N. H.		H S	Neison, Joyce M., Worcester		58
McLeod, Duncan E., Clinton		61	Nichols, David A., Leominster		61
McMaster, Paul, Worcester		Ch S	*Nicholson, Mrs. Clara K., Worcester		H g
Melder, Susan J., Worcester		60	Nickel, Herbert J., Jamaica Plain		Ps g
Melville, Gwendolyn I.,			Nietupski, John E., Indian Orchard		61
N. Wilkesboro, N. C.		59	Nikitas, Theodore M., Fitchburg		59
Mess, Irwin H., Worcester		58	†Nodine, Ralph H., Templeton		Ed g
†Messing, Robert, Brooklyn, N. Y.		59	Nugent, Gerald F., Worcester		58
Michaelson, Carl B.,					
Woodside, L. I., N. Y.		61	Oakes, Mrs. Nancy H., Holden		59
Michaud, Paul A., Van Buren, Me.		59	O'Connell, John J., Westboro		Ch g
*Micuta, Jurate E., Worcester		58	O'Connor, Gerald P., Worcester		61
Mika, Paul J., Worcester		G F	Oertly, Frederick J., Norwalk, Conn.		60
Miller, Arnold, Worcester		Ps g	Ohwaki, Sonoko, Sendai, Japan		Ps F
Miller, Mary E., Cherry Valley		59	Oickle, George B., Worcester		58
Miller, Stuart R., Brooklyn, N. Y.		58	O'Janne, Linda A., Paxton		61
Miller, Susan P., Worcester		59	*O'Laughlin, Donald P., Pittsfield		s
†Mintz, Mrs. Alisa B., Worcester		59	O'Leary, Carol A., Ramsey, N. J.		60
Mita, Mrs. Patricia M., Worcester		60	Olofson, Marguerite E., Rochdale		59
Mitchell, Albert R., Temple, Me.		G S	Olofson, Patricia M., Rochdale		60
Mitchell, Jeffrey M., Ashburnham		61	Olson, Marjorie L., Worcester		Ed g
†Mitchell, Richard E., Rochester, N. H.		61	Olson, Robert L., Auburn		58
Mitchell, Robert A., Worcester		59	Olund, Robert N., Auburn		59
			O'Neil, John J., Worcester		Ed g

Name	Home Address	Class	Name	Home Address	Class
Oppenheimer, Laurence,			Raila, Ruth A.,	Worcester	59
Kew Gardens, N. Y.	60		Rako, Julius,	New York, N. Y.	58
Osborn, Mrs. Beverly H.,	Worcester	Ed S	Rand, Leroy W.,	S. Portland, Me.	H F
O'Toole, William F.,	Worcester	58	Raphaelson, Arnold H.,	Worcester	Ec F
Overstreet, Gerald E.,	Ringwood, Okla.	G S	Raphaelson, Elliot,	Worcester	59
†Ozols, Austra,	Manchester, Conn.	61	Rappa, Robert J.,	Franklin	58
Pacek, Stanley E.,	Worcester	59	Rawson, Frederick C.,	Oahu, T. H.	61
Paik, Kumok,	Seoul, Korea	60	Raymond, Susan C.,	Schenectady, N. Y.	Ps g
Pang, Gerrit A.,	Honolulu, T. H.	61	Razansky, Donald B.,	Newburgh, N. Y.	59
Paparella, Catherine A.,	Worcester	60	Redford, Harvey R.,	Far Rockaway, N. Y.	60
Pappas, Harry J.,	Webster	61	Reed, Rosemary E.,	Yeadon, Pa.	61
*Parisi, John E.,	Onset	61	Reeh, Dong Yong,	Seoul, Korea	Ec g
†Park, David A.,	Shrewsbury	59	Rehfeld, Joan A.,	New York, N. Y.	59
Park, Won Taik,	Seoul, Korea	59	Reilly, James A.,	Shrewsbury	59
*Parker, Russell I., Jr.,	N. Brookfield	61	Reilly, William T.,	Shrewsbury	Ec g
Parkin, Robert E.,	West Boylston	61	Remmer, Harvey L.,	Worcester	58
Parslow, Richard F.,	Clinton	61	Reschke, Oures P.,	Worcester	58
Pasceri, Gregory J.,	Clarksburg, W. Va.	59	Resnick, Idrian N.,	Buffalo, N. Y.	58
Paskevich, Michael P.,	Nashua, N. H.	61	Reta, Taye W. G.,	Harar, Ethiopia	58
Passler, Richard D.,	Lawrence	61	Rho, Mann Q.,	Seoul, Korea	59
†Payne, Susan K.,	Northboro	s	Ribak, Barbara S.,	Forest Hills, N. Y.	60
Pearson, Belva J.,	Minneapolis, Minn.	61	Ribb, Cynthia M.,	Worcester	58
Pearson, Margaret J.,	Webster	Ed g	Rice, Janet G.,	Princeton	61
Pearson, Robert S.,	Holden	58	Rice, Jerald A.,	Millbury	58
†Pehl, Spencer K.,	Shrewsbury	61	*Richard, Alfred J.,	Gardner	Ch F
Pendleton, Jesse L. S., Jr.,			Richards, Brendon W.,	Oxford	59
Brooklyn, N. Y.	G S		Richardson, Anna,	Wellesley	58
Pepin, Frances M.,	West Boylston	60	Richardson, Nancy,	Worcester	59
Peragallo, Anita,	New York, N. Y.	s	Richmond, Bradford L.,	Taunton	60
Pero, Perry R.,	Worcester	61	Rigolo, Richard D.,	Clifton, N. J.	61
Peters, Donald,	Worcester	58	Rimens, Gloria R.,	Washington, D. C.	61
Peters, R. Norman,	Worcester	61	Robidoux, Richard E.,	Brookfield	59
Peterson, Lee K.,	Worcester	58	Robinson, Betty A.,	Washington, D. C.	59
Petridis, Harry G.,	Hyannis	61	Rockwell, Dale L.,	Groton, Conn.	59
Phares, Carl, III,	Sarasota, Fla.	60	Roesmer, Josef,	Mainz/Rhein, Germany	Ch g
Philip, Andrew L.,	Worcester	59	Rogers, William F.,	Leominster	59
Pierce, Janet A.,	Leominster	59	Romo, Charles D.,	Peabody	60
Pierce, John S.,	Leominster	59	*Rosen, Muriel S.,	Passaic, N. J.	60
†Pinate, Mrs. Elena Ch. de,			Rosenberg, Henry E.,	Hempstead, N. Y.	Ch F
Panama, Panama	H g		Ross, Barbara L.,	Miami, Fla.	60
†Pinate, Ernesto,	Panama, Panama	Ec g	Ross, Lois R.,	Worcester	61
Pinkus, Frances A.,	Worcester	61	Rosser, David R.,	Frackville, Pa.	H S
Pitt, John R.,	Worcester	Ed g	Rossinow, Edward,	Brooklyn, N. Y.	58
Plich, Mrs. Anna S.,	Worcester	Ed g	Rossley, Paul R.,	Leicester	60
Polhemus, Ellen A.,	Belvidere, N. J.	58	*Rossner, Morton,	Levittown, N. Y.	59
Potash, Ethel J.,	Worcester	59	Roth, David M.,	Brooklyn, N. Y.	H S
Potter, Spencer R.,	Leicester	Ed g	Rotman, Steven,	Worcester	60
Power, Patricia R.,	Worcester	Ec S	Rowell, Mrs. Barbara M.,	Holden	Ed g
Press, Marshal A.,	Leominster	60	Royer, Harold T.,	Gardner	59
Press, Russell G.,	Wethersfield, Conn.	59	*Royston, Patricia M.,	Auburn	59
Preston, Richard E.,	Carlton, Wash.	G F	Ruddy, Edward R.,	Rutland	60
Prouty, Joel W.,	Auburn	61	Ruf, Julia K.,	Catskill, N. Y.	61
Pucilauskas, JoAnn G.,	Worcester	61	Rugh, Patricia J.,	Manlius, N. Y.	60
Pulaski, Joan R.,	Worcester	61	Rushia, Donald J.,	Gardner	60
Qadir, Abdul,	Karachi, Pakistan	Ec F	Ryan, Jane H.,	Webster	Ed g
Qadir, Mrs. Mahboob J.,			Ryan, Joseph G.,	Methuen	60
Karachi, Pakistan	Ed g		St. George, Robert J.,	Warren	58, Ed g

Name	Home Address	Class	Name	Home Address	Class
Salvi, Jean L., Everett		G S	Sonta, Chester J., Jr., Worcester		60
Salvin, Leonard, Worcester		60	*Sorenson, Richard, Worcester		s
Salzer, Doris D., Worcester		s	Sotir, Sam V., Southbridge		59
*Samia, Mrs. Sallie R., Worcester		58	Souza, Alfred, Jr., N. Dartmouth		61
Samuel, Howard H., Roxbury		60	Spector, Harvey B., New Haven, Conn.		60
Sandholm, Elizabeth A. H., Brooklyn, Conn.		61	*Speed, Ronald C., Worcester		61
Sandrew, Stuart H., Longmeadow		59	Speier, Sybil D., Washington, D. C.		Ps g
Sandy, I Made, Denpasar, Indonesia		G g	Speiser, Marc H., Far Rockaway, N. Y.		59
†Santaniello, Anthony A., Providence, R. I.		s	Spiegelman, Arthur, Bronx, N. Y.		61
Santoian, Barbara A., Worcester		60	Sprott, Gwendolyn R., Dudley		60
*Saravo, Edward J., Webster		59	Stanick, Carol E., Worcester		59
Sargent, Bradford H., Charlton		60	Stannard, George E., Paxton		M g
Savage, Betsy I., Queens Village, N. Y.		61	Stanton, Betty A., Clinton		58
Savage, Marcia A., Worcester		61	Stark, Claude A., New York, N. Y.		58
Savage, Sandra R., Worcester		61	Stayton, Samuel E., Lawrence, Kans.		Ps s
Saydam, Mrs. Barbara R., Franklin		G S	*Steele, Frederic L., Boxboro		58
Sayre, Joanna M., Worcester		61	Steiman, Phillip, Worcester		60
Schalck, Harry G., Reading, Pa.		H g	Stein, Harold C., N. Miami Beach, Fla.		58
Scherrer, Gail F., Housatonic		61	Stein, Robert A., New York, N. Y.		60
†Schervée, Mrs. Gertrude C., Worcester		Ed S	Stein, Steven H., Flushing, N. Y.		61
Schiller, Peter H., Memphis, Tenn.		Ps g	Stenmark, Erik E., Worcester		60
Schoenfeld, Norman, Haverhill		59	*Stepanian, Ludwig J., Sutton		H g
Schrader, Hugh D., Catskill, N. Y.		59	Stetson, Penelope, LaPlume, Pa.		61
Schunmann, William C., Jr., Millbury		61	Stockhaus, Robert A., Jr., Worcester		60
Schwalb, Theodore J., Marblehead		60	Stone, Brenda J., Orange		61
Schwartz, Estelle B., Brooklyn, N. Y.		59	†Storm, Carlyle B., Fitchburg		s
Scola, Angelo R., Worcester		59	Strandberg, Arne E., Jr., Shrewsbury		59
Scopelliti, Joseph A., Leominster		59	Strong, Robert W., Hempstead, N. Y.		61
Scott, Cornelia, Andover		61	Stropp, Richard J., III, Rome, N. Y.		61
Scott, William J., Templeton		60	Struble, Robert M., Webster		59
†Sears, Keith G., Woodstock, Conn.		59	Strumpf, George B., Lynbrook, N. Y.		59
Sears, Richard D., Williamstown		60	Sudol, Lorraine A., E. Rutherford, N. J.		59
Semone, Ronald C., Worcester		60	Suh, Sang Chul, Seoul, Korea		58
Sentance, Wayne R., Worcester		61	Sullivan, Anthony R., Andover		61
Sergent, Lois J., Rutland		60	Sullivan, Michael V., Worcester		59
Shannin, John, Worcester		58	†Sullivan, Robert J., Providence, R. I.		G g
Sharin, Ina R., Worcester		61	Summers, Richard E., Syosset, N. Y.		59
†Shea, George P., Worcester		61	Sund, Mrs. A. Ingeborg, Worcester		59
Shields, Rosemary, N. Westport		60	Sundheim, Gail M., Worcester		60
Siegel, Stephen J., Mount Vernon, N. Y.		58	Sundin, Clark B., Jr., Worcester		60
Sills, Richard L., Worcester		60	Surdi, Sylvia L., Bloomfield, N. J.		Ps g
Silver, Michael, Worcester		59	Suzuki, Tetsuo, Tochigiken, Japan		Ec S
Simon, Warren H., Worcester		59	Svenson, John A., Worcester		60
Siok, Barbara A., Clinton		58	Switzer, Janet, Providence, R. I.		Ps g
Slyder, Barbara L., Emporium, Pa.		59	Swope, Charles H., Petersham		61
Smalanskas, George J., Worcester		Ed g	*Taylor, Laurence H., Fitchburg		61
Smith, Carol G., Auburn		60	Terrio, Frederick J., Jr., Worcester		60
†Smith, Donald L., Auburn		Ed g	Teshoian, Sarkis, Worcester		58
*Smith, Douglas A., Holden		59	Thompson, Leonard S., Worcester		61
Smith, Genevieve A., Shrewsbury		61	Thompson, William F., Framingham		G g
Smith, Laurence C., Jr., Canaan, Conn.		Ps g	†Thurman, Eulah M., Claremore, Okla.		61
Smith, Lawrence P., Worcester		60	Toder, Phyllis S., Bronx, N. Y.		59
Smith, Peter C., Plymouth, N. H.		59	Topkin, William E., Mystic, Conn.		60
Smith, Venice M., Farnumville		61	Tozeski, Stanley P., Shrewsbury		60
*Smith, Walter M., Northboro		61	Transue, James R., Ridgefield, Conn.		60
Snyder, Betty A., S. Lancaster		59	†Troianello, Emilio J., Lawrence		Ch g
Sommer, Sigfried, Worcester		60	Tryon, Ann C., Pownal, Me.		61

Name	Home Address	Class	Name	Home Address	Class
Tuppa, George J., Worcester		59	†Weinberger, Leon J., Worcester		s
Tyroler, Ronald S., Jamaica, N. Y.		60	Weiner, Leonard B., Brooklyn, N. Y.		59
			Weinstein, Linda A., New York, N. Y.		61
Uesaka, Yasuo, Tokyo, Japan		60	†Wells, Ruth, Worcester		s
Uskokovic, Milan R., Shrewsbury		Ch g	Werner, Stephan L., Jamaica, N. Y.		60
Utsunomiya, Takeshi, Tokyo, Japan		Ch S	*Wetherbee, Otis C., No. Grafton		60
			*Whipple, Robert G., Fitchburg		61
Vaitiekaitis, Anastasia, Worcester		59	Whitaker, David A., Worcester		59
Vandersea, Nancy A., Whitinsville		59	Wilensky, Barbara D., Worcester		58
VanDyke, James R., Whitinsville		61	Willey, Roy C., Holden		59
VanRoy, Edward, New York, N. Y.		60	†Williams, Philip G., Auburn		Ed g
†VanTilburg, Mrs. Minna, Dunkirk, Ind.		s	Willman, Robert H., Southbridge		61
Vardzal, Mary B., Union, N. J.		59	†Wilson, Kenneth R., Townsend Harbor		59
Vecchio, Peter A., Worcester		61	Wilson, Louis M., Sherborn		60
†Vecchi Scavalli, Giacomo, Rome, Italy		G g	Wilson, Richard S., Methuen		59
*Vick, Kenneth S., Worcester		59	Wilson, Robert B., Worcester		58
Virostek, Carol M., Douglas		61	Wirarat, Amporn, Bangkok, Thailand		60
Vogel, Peter F., Teaneck, N. J.		59	Wolf, Diana M., Shrewsbury		61
Vogel, William, Laurelton, L. I., N. Y.		Ps g	Wondolowski, Mary J., Worcester		61
Vuona, Peter H., Worcester		60	Woods, William, London, England		61
			†Wright, Barry N., Fitchburg		60
Wabrek, Alan J., Manchester, Conn.		59	Wright, Thomas F., Jr., Leominster		61
Wagner, Paul R., Fitchburg		60			
Walker, Barry J., Worcester		58	Xanthakos, Jeanne D., Southbridge		59
Walker, Philip E., Worcester		58			
Walker, Thomas P., Athol		60	Yahnian, Ovsanna, Beirut, Lebanon		58
Wallenfels, Helmut B., Hessen, Germany		59	Youman, Toby E., Medway		60
Walsh, Cornelius F., Worcester		60	Young, G. Frederick, Manhasset, N. Y.		59
Walsh, John F., New York, N. Y.		Ps g	Young, Priscilla E., Irvington, N. Y.		61
Ward, Frances E., Freedom, Me.		61	*Yusuf, Kaniz F., Lahore, W. Pakistan		G F
Warfield, Joan, Worcester		s			
Wastila, William B., Leicester		60	Zaini, Nadirsjah H. A., Lampung, Indonesia		G g
Waterhouse, Mrs. Jane W., Holden		58	Zambrano, Paul J., Worcester		58
Waters, Patricia R., Cranston, R. I.		61	Zanoni, Dante R., Norway, Me.		58
Watstein, George J., New Haven, Conn.		60	Zaramba, Kenneth C., Rutland		59
Waxman, Norman, New York, N. Y.		58	Zarr, Gerald H., Worcester		59
Weaver, Parker K., Sturbridge		61	Zarr, Melvyn H., Worcester		58
†Webber, Edgar E., Worcester		B g	Ziegler, Barry M., New York, N. Y.		58
*Wehrli, Robert W., Auburn		59	Zisch, Anna I. S., Worcester		61

I (2). STUDENTS IN RESIDENCE LESS THAN ONE SEMESTER

Abruzzise, Anthony P., Jr., Worcester	59	Hunter, Carl E., Worcester	59
Barry, Charles R., Rochester, N. Y.	60	Levy, Harold J., Worcester	Ed g
Bjorn, Robert H., Brooklyn, N. Y.	H g	MacDonald, David J., Athol	60
Canty, Sheila L., Webster	60	Mochau, Barbara J., Worcester	61
Caswell, Doreen F., Westport	60	O'Malley, Mary P., Clinton	61
Clark, Mrs. Dorothy S., Worcester	Ed g	Palumbo, Biagio J., Franklin	60
Dunbar, Horace E., Jr., Woodville	61	Reynolds, John M., Ft. Lauderdale, Fla.	G g
Foster, Elaine E., Worcester	Ed g	Rintala, Kaarlo A., Worcester	60
Gordon, David F., Worcester	60	Robinson, Mrs. Sallie E., Worcester	58
Green, Mrs. Molly H., Auburn	61	Yaptinchay, Felicidad Y., San Juan, Philippines	Ch g
Guerra, Edward J., Fitchburg	60		

II. SUMMER SCHOOL STUDENTS — 1957

* Intersession only.

Adams, Mrs. Muriel C., Washington, D. C.
Aho, Leo O., Southbridge
Alix, Paul A., Spencer
Andreson, Nicholas J., Worcester
Auclair, Jean L., Worcester
Avila, Nidia, Panama, Panama

Backstrom, Mrs. Frances G., Worcester
*Badger, William C., Dover
Bagley, Richard, Blackstone
Bailey, David O., Worcester
Barker, Rosalind F., Forest Hills, N. Y.

Barry, Charles R., Worcester
Bartlett, Lawrence W., Worcester
Bartlett, Robert J., Worcester
Barton, Mrs. Margaret O'R., Milford
Benuskavich, Daniel J., Worcester

Berg, Carl H., Worcester
Bissell, Joyce H., Worcester
*Borden, Elizabeth B., Concord
Bolster, Philip W., Whitinsville
Boria, Thomas, Millbury

Bostic, Mrs. Corrine, Worcester
Boudreau, Roland A., Worcester
Boyle, Mary-Ellen C., Worcester
Bradley, Joseph F., Bolton
Breen, Jane C., Shrewsbury

*Broberg, Craig V., Worcester
*Brockman, Michael D., Brooklyn, N. Y.
Brouwer, Marilyn E., Whitinsville
Brown, Donald F. S., Worcester
Brown, Edward V., Caldwell, N. J.

Buckley, Robert R., Worcester
*Bujnevici, John J., Gilbertville
Burke, Cynthia M., Worcester
Burner, Charles E., Worcester
Burstein, Donald E., New York, N. Y.
*Buscone, Louis J., Jr., Milford

Caloccia, Ernest M., Worcester
Calverley, David S., Auburn
*Cameron, Bernard J., Worcester
*Campbell, Robert G., Auburn
Carey, John F., Jr., Millbury
Caron, Eleanor L., Worcester
Carr, Calvin, Worcester
Cha, Chung Hwa, Seoul, Korea
Chakonas, Paul C., Worcester
Charman, Alfred J., Hamden, Conn.
Christie, John C., Mountain View, N. J.
Clark, William, Worcester

*Cluett, John G., Jr., Troy, N. Y.
Cohan, Mrs. Suzanne H., Worcester
*Cole, Bruce L., Worcester
Coleman, Judith, Clinton

*Comeau, Raymond A., Jr., Worcester
Connolly, Vincent F., Worcester
Corinaldi, George V., Jamaica, N. Y.
*Cormier, Alwyn G., Lunenburg
Courtney, Richard J., Worcester
*Cox, John H., Hardwick, Vermont
Creiger, Ernest L., Worcester
Crevier, Roger L., Southbridge
Cullen, Charles G., Worcester
*Cunningham, Jeffrey H., Paxton
*Cunningham, Richard J., Riverdale, N. Y.
Currier, Gable L., Leicester

Daby, Walter N., Worcester
Dahlstrom, Robert F., Auburn
Dander, Emanuel, Spencer
*Davis, James E., Marlboro
Denechaud, Virginia M., Worcester
Dennis, Wilfred L., Otter River
DeNormandie, Mrs. Martha, Lincoln

*DiGregorio, Carl J., Milford
*Dolphin, Donald H., Worcester
Dominis, Beatrice L., Worcester
Doyle, Mrs. Marie O'R., Worcester
Driscoll, James R., Worcester
Duclos, Clarence E., Webster
Dunn, Robert J., Millbury

Eager, John F., Worcester
Ede, Elwood K., Worcester
Elsden, Robert E., Southwick
Engel, Izo, Worcester

Feingold, David I., Worcester
Fields, Walter J., Athol
*Ferguson, Lila M., Gardner
Fingar, William P., Worcester
*Fisher, Mrs. Phyllis M., Worcester
Fisher, Mrs. Rose M., Worcester
Fletcher, Nancy M., Holden
Flexer, Abe S., Worcester
Flink, Jean C., Holden
Flower, David A., Worcester
Freedman, Lawrence E., Worcester
Frey, Peter A., Centralia, Ill.
Fuchs, Mrs. Gaynell M., Worcester

Gadavanij, Vilaichird, Bangkok, Thailand
Galli, John M., Rutland
Gardner, Leland L., Clinton
Gates, Jesse A., North Oxford
Gaucher, Adrian A., Jr., Southbridge
Gavagan, Francine M., Worcester
Gay, Clifford C., Phoenix, N. Y.
Gentile, Constance A., Worcester

Gertler, James S., Rego Park, Queens, N. Y.

- *Goldman, Norman H., Worcester
- Goldstein, Harold, West Roxbury
- Gordon, Arthur L., Worcester
- Gordon, Audrey E., Worcester
- Gorman, George R., West Upton
- Granger, Wilfred R., Auburn
- Grant, William T., Worcester
- Gray, Seymour, Forest Hills, N. Y.
- Green, Phyllis A., Worcester
- Green, Phyllis H., Worcester
- Greenman, Elizabeth, Paxton
- Griffith, Linda P., Worcester
- Gual, Carlos, Worcester
- Guerin, Henry J., Webster
- Gustafson, Ann E., Worcester
- Gustavson, Edwin A., Worcester

- Hacanis, Andrew J., Worcester
- Hagstrom, Conrad W., Millbury
- Hagstrom, Mrs. Mary F., Worcester
- Hammer, Judith L., Wellesley
- *Handleman, Chester, Worcester
- Hasty, Edward H., Worcester
- Hayes, Bertrand F., North Grafton
- Hayward, Levis W., Jr., Worcester
- *Hegedus, Ivor R., Caracas, Venezuela
- Hendrickx, Charles H., Worcester
- *Hicks, Norman W., Fitchburg
- Higgins, Richard C., Worcester
- Hinton, Jane, Framingham Ctr.
- Huhn, William A., Jr., Worcester
- Huka, Elisabeth C., Indonesia
- Hunt, Dorothy M., Northboro
- Hutchinson, William A., Worcester

Iacovone, Julio J., Worcester
Iannacone, Marie R., Fitchburg

- *Jakubowicz, Raymond S., Clinton
- *Jasper, Suzanne L., Worcester
- Javery, Milton H., Worcester
- Jeffrey, John J., Worcester
- Jensen, Walter M., Jr., Worcester
- Johnson, Herbert G., Jr., Worcester
- Johnson, Philip F., Worcester
- Johnson, Wayne P., Worcester

- Kallio, Rhoda J., Shrewsbury
- *Kallio, Mrs. Signe M., Worcester
- Kaplan, Alan G., Worcester
- Karagosian, John, Whitinsville
- Karno, Maartini, Indonesia
- Keating, John J., Fitchburg
- Keith, Stephen G., Monson
- Kelley, Paul A., Baldwinville
- Kesseli, Paul C., Shrewsbury
- Kim, Tai Dong, Seoul, Korea
- Kinell, Edwin E., Worcester

- Kistler, Walter A., Worcester
- Klem, Bernard A., Framingham
- Knight, William W., Jr., Worcester
- Koki, Arthur S., Worcester
- *Kolumber, Denis A., East Douglas
- Kontaxopoulou, Despina P. S., Athens, Greece
- Kramer, Ronda M., Worcester
- *Kronick, Barry L., North Adams
- Kujala, Shirley M., Holden
- Kunawat, Rajnikorn, Bangkok, Thailand

- Laakso, Emily S., Southbridge
- Laferte, Roland O., Worcester
- Lamar, Richard M., Osterville
- Latino, Dominic J., Worcester
- Les, Frederick J., Clinton
- *Lespasio, Ralph L., Revere
- Lihn, Lois F., Vineland, N. J.
- Lindstrom, Robert D., Northboro
- Lingis, Mary J., Worcester
- Lister, Victor U., Leominster
- Loewus, Ann L., Washington, D. C.
- Lucas, Mrs. Agnes P., Corpus Christi, Tex.
- Lucas, Ronald A., Auburn
- Lyons, James F., Worcester

- MacLeod, Deirdre J., Worcester
- Madore, George E., Boylston
- Mageau, Robert J., Fiskdale
- *Makela, Richard D., Worcester
- *Mammo, Mekbib, Harar, Ethiopia
- Mammone, Lucien C., Leominster
- Manning, Bruce W., Gardner
- Manning, Mrs. Elinor S., Woodville
- Marcus, Harold G., Worcester
- Margulis, Stephen T., Worcester
- *Marrino, Joseph L., Worcester
- Marston, Jean I., Worcester
- Martin, Norman H., Jr., Shrewsbury
- *Mascitti, Samuel R., Leominster
- Mason, Marcus M., Worcester
- Mattimore, Norine M., Worcester
- Mattson, Joan L., Auburn
- Mayer, Sigrid S., Worcester
- Mays, Lois-Ann M., Worcester
- McInnes, Bruce G., Woonsocket, R. I.
- McKay, Richard J., Webster
- McSherry, Francis J., Worcester
- Mendoza, Walter E., Millis
- Miller, Susan P., Worcester
- Mitchell, Albert R., Temple, Maine
- Molloy, Kathleen E., Auburn
- Monroe, Cynthia L., West Boylston
- Moore, Thomas F., Jr., Worcester
- Morano, Charles K., Worcester
- Moreau, Claudette T., Pawtucket, R. I.
- *Morelle, Loretta M., Shrewsbury
- *Moriarty, Hugh J., Worcester
- Morin, Donald P., North Oxford

Morrison, Donald L., West Millbury
Morse, Philip L., Randolph, Vt.
*Mullen, John E., Clinton
Mulio, Shirley E., Worcester
Murphy, David J., Jr., Provincetown
Mutsutoshi, Kosaka, Worcester

Nelson, Bruce S., Worcester
Nugent, Gerald F., Worcester

O'Brien, Edward F., Jr., Worcester
Oickle, George B., Worcester
Olikkala, William C., Fitchburg
*Olson, Robert L., Auburn
Omrcanin, Ivo, Worcester
*Oosterman, Gordon, Edgerton, Minn.
Osborn, Mrs. Beverly H., Worcester
Oswell, David D., Worcester

Papelian, Mary, Milford
Park, David A., Shrewsbury
Park, Won Taik, Seoul, Korea
Parslow, Richard F., Clinton
Paulson, David C., Canton, Conn.
*Petridis, Marie E., Hyannis
Porter, Mrs. Elia F., St. Petersburg, Fla.
Potter, Spencer R., Leicester
Power, Patricia R., Worcester
Powers, Vincent E., Worcester
*Press, Russell G., Worcester
Price, Malcolm I., Clinton
*Purdon, Gerald R., Brooklyn, N. Y.
Putnam, Barbara A., Shrewsbury

*Ramsdell, Herbert F., Jr., Worcester
Raphaelson, Arnold H., Worcester
Rayle, Mrs. Berenice, Northboro
Reed, Howard B., Holden
Reschke, Oures P., Worcester
*Resnick, Idrian N., Buffalo, N. Y.
Rice, Virginia E., Worcester
Roche, John L., Baldwinsville
Rodriguez, Rosa M., Worcester
Rourke, John F., Millbury
Ryan, Jane H., Webster

Safka, Anthony T., Gardner
St. George, Robert J., Warren
St. Onge, Remi L., Southbridge
Salvi, Jean L., Everett
Samia, Mrs. Sallie J., Worcester
Saulnier, Victor E., Reading
Savulis, Anthony U., Auburn
Schwegler, Hanni, Worcester
*Seifer, Joan R., Hudson
Simsarian, Mrs. Lowerre H., Worcester
Shannin, John, Worcester
Sinnery, Donald J., Worcester
Smalanskas, George J., Worcester

Smith, Donald L., Auburn
Smith, Genevieve A., Shrewsbury
Smith, Paul F., Worcester
Sorenson, Richard, Worcester
Soter, Anthony, Worcester
*Spear, June P., Natick
Stafford, Priscilla M., Webster
Stauffer, John E., Worcester
Stauffer, Mrs. Valerie B., Worcester
Stearns, Nancy E., Worcester
*Steele, Frederic L., Boxborough
*Stein, Harold C., Hudson, N. Y.
Stevens, Dean F., Northboro
Struble, Robert M., Webster
Sullivan, Maureen E., Worcester
Sullivan, Michael V., Worcester
Sullivan, Robert J., Worcester
Sund, Mrs. A. Ingeborg, Worcester
Sundquist, Birgit M., Worcester
Sutcliffe, June L., Auburn
*Suzuki, Tetsuo, Tochigi-Ken, Japan
Swindell, Janice M., Sutton

*Taib, Agoes, Indonesia
Tannenbaum, Mrs. Rose, Worcester
Tateronis, Arthur A., Worcester
Teixeira, Leonard F., Hudson
*Teshoian, Sarkis, Worcester
Tibor, Joachim, Worcester
Tsourides, Konstantine N., Worcester

Walker, John F., Westboro
Walker, Nancy G., Westboro
Walker, Philip E., Worcester
*Walkowiak, Edmund F., Webster
Walsh, Cornelius F., Worcester
Warner, Chester S., Brookfield
Warner, Stanley S., Worcester
Waterhouse, Mrs. Jane W., Holden
*Waxman, Norman, Worcester
Wehrli, Robert W., Auburn
*Weinberger, Leon J., Worcester
Weisenberg, Matiasyohu, Worcester
*Wells, Frank B., Barre
Wells, Ruth E., Worcester
West, Togo D., Winston-Salem, N. C.
Wickwire, Mrs. Barbara E., Worcester
Wilson, Martin C., Bay Shore, L. I., N. Y.
Wolfe, Jane M., Fitchburg
*Wondolowski, Anthony S., Worcester
*Wooten, Barbara Ann, Worcester

*Young, George F., Manhasset, N. Y.

Zack, Leonard, Southbridge
Zaini, Nadirsjah H. A., Indonesia
*Ziegler, Barry M., New York, N. Y.
Zischka, Paul L., East Brookfield
Zottoli, Carolyn M., Holden

SUMMARY OF STUDENT ENROLLMENT FOR 1957-1958

Undergraduates

	Men	Women
Freshmen	114	78
Sophomores	135	66
Juniors	141	52
Seniors	105	41

	Men	Women	Total
Total Undergraduates	495	237	732
Graduate Students	147	58	205
Special Students	18	14	32
Evening College (enrolled in day college)	2	1	3
TOTALS — Men's College, Women's College and Graduate School	662	310	972
1957 Summer School	225	100	325
Total students	887	410	1297
Less duplications	88	35	123
Net totals	799	375	1174
Evening College*			
Fall term 1957	399	206	605
Spring term 1958	430	155	585

* Does not include those enrolled for non-credit courses.

Degrees Conferred

In the Calendar Year 1957

BACHELOR OF ARTS

- Silverio Pedro Almeida
Martin Arons
with Honors in International Relations
William Neil Aulson
Joyce Ann Baker
Joseph Irvin Berman
Charles Irving Bloomgarden
Lewis Eugene Bogage
Robert Aram Bogigian
*Jerome Jerald Bolten
Inge Komers Broverman, Cum Laude
and with High Honors in Psychology
Marshall Holland Bruce
*Ronald William Brust
Barbara Bryant
Lorna Little Carter
*Martin Bert Cohen
Delores Felice Collins
William George Cooper, Jr.
Edward Charles Cooperman
John Everett Culbert
George Brammer Dawson, Cum Laude
and with Honors in Geography
Sidney Ernest DeBoer
Nicholas Emanuele DeNigris
Peter Michael D'Errico
Wendy Nyerdi Wang Djeu
Robert Walter Duffy
Paul Ward English
Erna Marie Erikson
Sylvie June Eriksson, Summa Cum Laude
and with High Honors in History
Rosaline Shirley Feinstein, Cum Laude
and with Honors in Psychology
Elaine Elizabeth Foster
Diana Garon, Cum Laude
Stephen Herbert Gens
Robert Gerro!
with Honors in Government
William Michael Gibbons
Henry Joseph Guerin
Virginia Marie Haas, Cum Laude
Herbert Hoover Haddad
Richard Allen Hanson
with Honors in Geography
Edythe Marilyn Harvey
Elmer Roger Haskell
Carolyn Edith Haupt
David Goodwin Hayes
with Honors in International Relations
Burton Paul Hoffner
June Ingrid Johanson
Carle Albert Johnson, Jr.
Richard Skerry Johnson
with Honors in Geography
Robert Arthur Johnson
Richard Norman Jolie
*George Charles Jones
Vivian Sylvia Kajander
Helen Kiakis
George Herbert Kronberg
William Bruce Laakso
Barbara Joan Schulz Lander
Anna Teresa Latino
*Ira Stephen Lawrence
Arthur Brown Lee, Jr.
Bruce Edward Levison
David Lawrence Lipkin
Joan Ann Litsky
Donna Marie Logue, Cum Laude
and with High Honors in Geography
John Leo Loughlin
Herman Abraham Makler
with Honors in English
Janyce Anne Mielke
*Mary Byrne Morgan
Edward Marshall Morin, Cum Laude
Donald Lyman Morrison
Edward Francis Mosher, II
Frank Burton Myska
Joseph Ernest Napolitano, Maga Cum Laude
John Francis Nichols, II
Yukiko Suzuki Nichols
*Samuel Joseph Noumoff
Marjorie Louise Olson
*David Dill Oswell
Judith Ann Palmer
Franklin David Parmenter
Frank Edwin Pawlina
David Allen Peirce
Adrianne Elizabeth Petridis
Philip Louis Philip
Joan Ruth Pinchak
Patricia Rose Power, Magna Cum Laude
George Henry Proffitt
Fred Leonard Resh, Cum Laude
Ronald Harry Rogstad
Eugene Mehlman Scheel, Cum Laude
and with High Honors in Geography
Leonard Arthur Schoolman
Frederick Seligman
Dorothy Joan Sergeant

* As of June 3, 1956.

Bernard David Shapiro, Cum Laude
and with High Honors in Government
*William Charles Sigalis
William Patrick Smelewicz,
with Honors in Sociology
Theodore Reuben Smith, Magna Cum Laude
Alan Michael Snyder
Mary Ann Steffon
Edith Bresnick Steinberg
Morton Steinberg
Norman Steinberg
Victor Hugo Stranberg, Cum Laude
and with High Honors in English

*Allan Martin Streichler
Edward Patrick Sullivan
*Helen Theresa Sullivan
Nobuhiko Takeuchi
Barbara Ann Tucker
Takeshi Utsunomiya
Joan Warfield
Gerald Melvin Weisenberg, Cum Laude
and with Honors in English
Robert Lewis Wright
Donald Roland Young, Cum Laude
Seung Soo Yun
Margaret Ann Ziarko, Cum Laude

BACHELOR OF BUSINESS ADMINISTRATION

David Bernard Brennan
Peter Baird Chamberlain
Donald William Charlesworth
Richard Wendel Parsons Clinedinst
*Lee Durant Dahlstrom
Robert William Dawson
Michael Stephen Dedes
*Ginés del Olmo
Ellis David Dworman
Lawrence Freed
Richard Francis Galvin
William John Gauld, Jr.
Richard Leonard Gremley
Christine Mary Hadjoglou
*Roy Lees Harper, Jr.
Donald Melvern Johnson
John Nasto Katori
Nunzio Anthony Lamberto
Frank Milton Look

Eugene Emile Loubier
Milton Stanton Marks
David Earl Maxham
Richard John Millington
Paul Paltrineri, Jr.
John Ronald Pitt
Milton Howard Raphaelson, Cum Laude
James John Seitas
Robert Ulysses Sawtelle
Paul Jay Shapiro
with Honors in Business Administration
Irving Bernard Sokov
Arnold Newton Spurr
Frederick Henry Starzyk
Carl Robert Swenson
Joseph Ludger Toussaint
Philip Carleton vanLeeuwen, Cum Laude
Charles Bradley Vinkemulder
Richard Terence Wiley

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION (Evening College)

John Francis Killoran
Raymond Kenneth Moran

Royal Francis Paquette
Henry Clarence Rivers

BACHELOR OF SCIENCE IN GENERAL STUDIES (Evening College)

Barbara Jeanne Coté
Alice Veronica DePaul
Richard Paul Freeman

Richard Charles Maguire
Leonard Francis Sears
Alice Pailoon Shamgochian

MASTER OF ARTS

Arlene Lee Aron
Donald Monroe Broverman
Frank Edward Clarkson
John Donald Coupe

Roland John Fuchs
Richard Lyman Gustafson
Chao Fan Hsu
Benjamin Joseph Intorre

* As of June 3, 1956.

John Peter Johnson, Jr.
Winthrop Donaldson Jordan
Benson Kane
Thor Hildin Kuniholm
Edith Miriam Levo
Richard Arnold Lockhart
Joseph Henry McFarland
Eisuke Nakayama
Salvatore John Natoli
Herbert Joseph Nickel

Norman Hall Pollock
Leroy Warren Rand
Edward Renny
Frederic Arnold Ritter
Henry Ernest Rosenberg
James Alexander Sherbaniuk
Victor Wallace Sim
Janet Switzer
William Vogel
Homer Philbrick Wentzell

MASTER OF ARTS IN EDUCATION

Robert Vincent Carey
Charlotte Roslyn Cohen
George Alfred Coupe
Nicholas Remsen Cowenhoven
John William Daly
George Andrew Downes, Jr.
Elizabeth Mary Foley
John Henry Fulgoni
Wilfred Richard Granger
Nancy Ann Johnson
Demeter Theodore Karaku

Justin John Kelley
William James Mara
Arthur Leonard Mullin
James Daniel O'Leary
John Powel Shaw
Helen Leblanc Sondrol
Herbert Stephen Sperry
Anna Kontulis Stavros
Donald William Sullivan
Paul Joseph Vernon
John Frederick Warner, Jr.

DOCTOR OF PHILOSOPHY

Amilcare Biancheria
Roger Maurice Albert Bibace
Howard Thomas Blane
John Joseph Breen, Jr.
Monir Saad Girgis
Charles Hersch
Mohammed Halim Khan
Donald Max Krus
Roger Gerard Lacoste
Telesforo Wisco Luna, Jr.

Raymond Joseph Marion
Richard Ernest Murphy
Godwin Anibeze Odenigwe
Robert Folsom Perry, Jr.
Harriet Amster Podell
Jerome Edward Podell
Anthony Sas
Daniel Walter Thomas
Grady Oscar Tucker, Jr.

HONORARY DEGREES

George Nathaniel Jeppson
Charles Lynch Phillips
Robert Ulich

Doctor of Laws
Doctor of Humane Letters
Doctor of Letters

SUMMARY FOR 1957

Degrees in Course

Bachelor of Arts	112
Bachelor of Business Administration	37
Bachelor of Science in Business Administration (Evening College)	4
Bachelor of Science in General Studies (Evening College)	6
Master of Arts	28
Master of Arts in Education	22
Doctor of Philosophy	19

Honorary Degrees

Doctor of Letters	1
Doctor of Humane Letters	1
Doctor of Laws	1

Degrees Conferred

In the Calendar Year 1958

BACHELOR OF ARTS

- Neil Mark Barton
Joseph Stephen Behrman
Davida Shulman Berman
Gerald Francis Berthiaume
Morton Arnold Bloomberg,
Magna Cum Laude
Michael Herbert Bolotin
Mary-Ellen Catharine Boyle
Michael David Brockman
Walter Mahlon Brown
Carl Joseph Bryson
Michele A. Buchholz
Anne Elizabeth Byron
Ernest Michael Caloccia
Bernard Joseph Cameron, Cum Laude
and with Honors in Psychology
Henri Lionel Caron
Douglas Dillaber Carr
Ronald Charles Cocchiola
*Suzanne Hieken Cohan
Anne Farrell Collins, Cum Laude
Marcia Laura Craig
Charles Allyson DeGrandpre
with Honors in History
Herbert Claude D'Elia
Richard Kasper Donabedian, Cum Laude
Alexander Evangelos Drapos
Peter Farnham Emens
with Honors in Geography
Eleanor Sylvia Erickson
Martin Alan Fischer
Cyril Robert Friedman
*Adrian Armand Gaucher, Jr.
Judith Mae Gladding, Cum Laude
Andrienne Lanry Goggin,
with Honors in International Relations
Stephen Roger Goldberg
Bennett Samuel Gordon,
with Honors in Sociology
*George Richard Gorman, Jr.
Roy Ferris Grandone, Cum Laude
Martin Arnold Gustavson,
with Honors in Geography
Richard Albert Hagglund
Elmer Vaughan Hamm
Richard Andrew Hansen
Nathan Hoult Hart, Summa Cum Laude
Dorothy Jane Healey
Betty Gail Heller
Millard Allen Howard, Summa Cum Laude
and with Highest Honors in History
Georgia Gray Howe
William Albert Hutchinson
Harold Christiennin Jackson, Jr.
Merrilee Ann Jackson
Philip Jagolinzer
Pearl G. Kacandes
Richard Alan Kagan
Signe-Maria Kallio
William Aylsworth Kennedy, Cum Laude
Joyce Micaela Kent
Ha Poong Kim
with Honors in Philosophy
*Bernard Alan Klem
Lawrence Allan Klinger
*William Walton Knight, III
Anthony John Kostreba
Mairi Janette Kusik
Carolyn Margaret Langille
Liisa Annikki Liedes, Cum Laude
Bruce Alan Lindberg
Rachel Landau Lipnick
with Honors in Psychology
Edward Joseph Lombardi
Frances Elizabeth Lynch
Roberta Elaine Maki, Cum Laude
and with Honors in Classics
Mekbib Mammo
with Honors in Geography
Harold Golden Marcus
with Honors in International Relations
Vida Regina Matusaitis
with Honors in International Relations
Joan Bernard Maxham, Summa Cum Laude
Lois Ann Mays
Jane Ann McGurren
with Honors in Chemistry
Irwin Howard Mess
Jurate Emily Micuta, Cum Laude
and with Honors in International
Relations
David Henry Moberg
Walter Francis Moossa
Claudette Therese Moreau
Ellen Anne Polhemus
Julius Rako
*Ivan Leon Reed
Harvey Ira Remmer, Magna Cum Laude
Jerald Arthur Rice
Anna Richardson
Edward Rossinow
Robert Joseph St. George

* As of June 9, 1957.

John Shannin
 Stephen Jeffrey Siegel
 *Donald James Sinnery
 Barbara Ann Siok
 *Richard Sorenson
 Betty Ann Stanton
 with Honors in Classics
 Sarkis Teshoian
 *Konstantine Nicholas Tsourides

Barry Jay Walker
 Jane White Waterhouse, Magna Cum Laude
 *Leon Judah Weinberger
 Barbara Dee Wilensky
 Robert Bruce Wilson
 Ovsanna Yahnian
 Melvyn Herbert Zarr, Cum Laude
 and with High Honors in Chemistry

BACHELOR OF BUSINESS ADMINISTRATION

Richard Langdon Anderson
 William Franklin Barrett
 Clayton Richard Bean
 Daniel Joseph Benuskavich
 Norman Joseph Boudreau
 Addison Sewall Brown
 Donald Frederick James Brown
 John Joseph Bujnis
 Joseph John Cariglia
 Bruce Lawson Cole, Magna Cum Laude
 George Miles Collins, Cum Laude
 John Henry Cox
 Thomas Albert Curtin
 Anthony Philip Damico
 John Francis Duffy
 Stephen Joseph Dupskey, Jr.
 William Peter Fingar
 Norman William Germain
 with Honors in Business Administration
 Sandro Goretti
 *Andrew Joseph Hacanis
 Joseph Edward Hachey
 Norman Richard Hill
 *Julio James Iacovone
 Stephen Jackson

Joseph Peter Kezal
 John Lapato
 Frederick Joseph Les
 Carl James Lubitski, Jr.
 *James Francis Lyons
 Thomas Robert Mailloux
 Stuart Robert Miller
 Thomas Francis Moore, Jr.
 Joyce Marie Nelson
 Gerald Francis Nugent
 Robert Leonard Olson
 Robert Stanley Pearson
 Donald Peters
 Lee Kent Peterson
 with Honors in Business Administration
 Robert Joseph Rappa
 Cynthia Marie Ribb
 *Remi Louis St. Onge
 Frederic Lewis Steele
 Leonard Ferreira Teixeira
 Norman Waxman
 Paul Joseph Zambarano
 Dante Romeo Zanon
 Barry Michael Ziegler

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION (Evening College)

James Charles Luby
 Nicholas Joseph Del Sole, Cum Laude
 Thomas Leo Tymon

BACHELOR OF SCIENCE IN GENERAL STUDIES (Evening College)

Robert Frederick Dahlstrom

MASTER OF ARTS

Alexander Agafonoff
 Richard Bagley
 John Perez Burnham

Thomas Michael Casey
 Won Hoon Chung
 William Joseph Dircks

* As of June 9, 1957

Mary Agnes Doran
 Richard Arthur Ellefsen
 Richard Aaron Erle
 Joseph Edward Hickey, Jr.
 Evelyn Weinstein Hyde
 Donald Marvin Isaac
 Herbert Isidor James
 Edward Sheldon Kersch
 Daniel Roderick MacGilvray
 Stanley Joseph Mann
 Henry Adelard Maurais
 Richard Haskayne McKey, Jr.
 James Moniz

Robert Myron Mooradian
 Patricia Jo Nair
 John Joseph O'Connell
 Myles Leo O'Donnell, Jr.
 Elaine Isabel Potter
 Susan Celistany Raymond
 David Morris Roth
 Boris Sheleg
 Laurence Cortelyou Smith, Jr.
 Samuel Edward Stayton
 Earl Thomas Steeves
 Helen Troy Young

MASTER OF ARTS IN EDUCATION

Louis Ferdinand Dion
 Audley Lloyd Dwyer
 Norman Richard Emond
 Earl Nathaniel Gooding
 Phyllis Helen Green
 Sigismund Haus
 Vivian Sylvia Kajander
 Edward Aloysius Kennedy, Jr.

Shirley Mae Kujala
 Richard Mirabeau Lamar
 Walter Edward Mendoza
 Madieros Mooshagian
 Gerald Joseph Morin
 Beverly Howe Osborn
 Robert Joseph St. George
 Donald Lynwood Smith

DOCTOR OF PHILOSOPHY

Donald Monroe Broverman
 Lawrence Michel Delliquadri
 Haig Cadmus Donoian
 Peter Joseph Drevinsky
 Charles Nelson Forward
 Woodford McDowell Garrigus
 Duilio Giannitrapani
 John Patrick Glennon
 Sister Mary Ursula Hauk
 Richard John Hovey

William Luther Jeyasingham
 Edward John Jordan, Jr.
 Stanley Edward Kaden
 Emma Kraidman
 Frederick Carl Miller
 Wilfred Gervais Myatt
 Alfred Joseph Richard
 Helen Leonore Smith
 Jean Barbara Laing Vance
 Cheng-Tsu Wu

HONORARY DEGREES

Kuo-Ching Li
 Paul Allman Siple
 Edward Augustus Weeks

Doctor of Science
 Doctor of Science
 Doctor of Humane Letters

SUMMARY FOR 1958

<i>Degrees in Course</i>		<i>Honorary Degrees</i>	
Bachelor of Arts	100	Doctor of Science	2
Bachelor of Business Administration	47	Doctor of Humane Letters	1
Bachelor of Science in Business Administration (Evening College)	3		
Bachelor of Science in General Studies (Evening College)	1		
Master of Arts	31		
Master of Arts in Education	22		
Doctor of Philosophy	19		

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CLARK UNIVERSITY

Sixty-eighth Annual Commencement

Worcester Memorial Auditorium

SUNDAY, JUNE 8, 1958



WORCESTER, MASSACHUSETTS

Order of Exercises

Prelude

Trumpet Tune and Air *Purcell*

Larghetto (2nd Symphony) *Beethoven*

Processional

Grand March (from *Tannhäuser*) *Wagner*

Invocation THE REVEREND ROBERT STANLEY ILLINGWORTH

Welcome by the President DR. HOWARD BONAR JEFFERSON

Commencement Address MR. EDWARD AUGUSTUS WEEKS
Editor, *The Atlantic*

Conferring of Degrees

Benediction THE REVEREND MR. ILLINGWORTH

Recessional

March on College Airs Arr. by C.F.G.

*The audience will kindly remain
standing during the Recessional*

Organist: Clifford Fowler Green

**Candidates for the Degree of Bachelor of Science
in Business Administration**

James Charles Luby

Thomas Leo Tymon

**Candidate for the Degree of Bachelor of Science
in Business Administration with Honors**

Cum Laude

Nicholas Joseph Del Sole

**Candidate for the Degree of Bachelor of Science
in General Studies**

Robert Frederick Dahlstrom

**Candidates for the Degree of Bachelor of Business
Administration**

Richard Langdon Anderson

William Franklin Barrett

Clayton Richard Bean

Daniel Joseph Benuskavich

Norman Joseph Boudreau

Addison Sewall Brown

Donald Frederick James Brown

John Joseph Bujnis

Joseph John Cariglia

John Henry Cox

Thomas Albert Curtin

Anthony Philip Damico

John Francis Duffy

Stephen Joseph Dupskey, Jr.

William Peter Fingar

Sandro Goretti

*Andrew Joseph Hacanis

Joseph Edward Hachey

Norman Richard Hill

*Julio James Iacovone

Stephen Jackson

Joseph Peter Kezal

John Lapato

Frederick Joseph Les

Carl James Lubitski, Jr.

*James Francis Lyons

Thomas Robert Mailloux

Stuart Robert Miller

Thomas Francis Moore, Jr.

Joyce Marie Nelson

Gerald Francis Nugent

Robert Leonard Olson

Robert Stanley Pearson

Donald Peters

Robert Joseph Rappa

Cynthia Marie Ribb

*Remi Louis St. Onge

Frederic Lewis Steele

Leonard Ferreira Teixeira

Norman Waxman

Paul Joseph Zambarano

Dante Romeo Zanon

Barry Michael Ziegler

* As of June 9, 1957

**Candidates for the Degree of Bachelor of Business
Administration with Honors**

Departmental Honors

Norman William Germain
Lee Kent Peterson

Cum Laude

George Miles Collins

Magna Cum Laude

Bruce Lawson Cole

Candidates for the Degree of Bachelor of Arts

Neil Mark Barton	Richard Alan Kagan
Joseph Stephen Behrman	Signe-Maria Kallio
Davida Shulman Berman	Joyce Micaela Kent
Gerald Francis Berthiaume	*Bernard Alan Klem
Michael Herbert Bolotin	Lawrence Allan Klinger
Mary-Ellen Catharine Boyle	*William Walton Knight, III
Michael David Brockman	Anthony John Kostreba
Walter Mahlon Brown	Mairi Janette Kusik
Carl Joseph Bryson	Carolyn Margaret Langille
Michele A. Buchholz	Bruce Alan Lindberg
Anne Elizabeth Byron	Edward Joseph Lombardi
Ernest Michael Caloccia	Frances Elizabeth Lynch
Henri Lionel Caron	Lois Ann Mays
Douglas Dillaber Carr	Irwin Howard Mess
Ronald Charles Cocchiola	David Henry Moberg
*Suzanne Hieken Cohan	Walter Francis Moossa
Marcia Laura Craig	Claudette Therese Moreau
Herbert Claude D'Elia	Ellen Anne Polhemus
Alexander Evangelos Drapos	Julius Rako
Eleanor Sylvia Erickson	*Ivan Leon Reed
Martin Alan Fischer	Jerald Arthur Rice
Cyril Robert Friedman	Anna Richardson
*Adrian Armand Gaucher, Jr.	Edward Rossinow
Stephen Roger Goldberg	Robert Joseph St. George
*George Richard Gorman, Jr.	John Shannin
Richard Albert Hagglund	Stephen Jeffrey Siegel
Elmer Vaughan Hamm	*Donald James Sinnery
Richard Andrew Hansen	Barbara Ann Siok
Dorothy Jane Healey	*Richard Sorenson
Betty Gail Heller	Sarkis Teshoian
Georgia Gray Howe	*Konstantine Nicholas Tsourides
William Albert Hutchinson	Barry Jay Walker
Harold Christiennin Jackson, Jr.	*Leon Judah Weinberger
Merrilee Ann Jackson	Barbara Dee Wilensky
Philip Jagolinzer	Robert Bruce Wilson
Pearl G. Kacandes	Ovsanna Yahnian

* As of June 9, 1957

Candidates for the Degree of Bachelor of Arts with Honors

Departmental Honors

Charles Allyson DeGrandpre, *History*
Peter Farnham Emens, *Geography*
Andrienne Landry Goggin, *International Relations*
Bennett Samuel Gordon, *Sociology*
Martin Arnold Gustavson, *Geography*
Ha Poong Kim, *Philosophy*
Rachel Landau Lipnick, *Psychology*
Mekbib Mammo, *Geography*
Harold Golden Marcus, *International Relations*
Vida Regina Matusaitis, *International Relations*
Jane Ann McGurren, *Chemistry*
Betty Ann Stanton, *Classics*

Cum Laude

Bernard Joseph Cameron, *and with Honors in Psychology*
Anne Farrell Collins
Richard Kasper Donabedian
Judith Mae Gladding
Roy Ferris Grandone
William Aylsworth Kennedy
Liisa Annikki Liedes
Roberta Elaine Maki, *and with Honors in Classics*
Jurate Emily Micuta, *and with Honors in International Relations*
Melvyn Herbert Zarr, *and with High Honors in Chemistry*

Magna Cum Laude

Morton Arnold Bloomberg
Harvey Ira Remmer
Jane White Waterhouse

Summa Cum Laude

Nathan Hoult Hart
Millard Allen Howard, *and with Highest Honors in History*
Joan Bernard Maxham

Candidates for the Degree of Master of Arts in Education

Louis Ferdinand Dion	Shirley Mae Kujala
Audley Lloyd Dwyer	Richard Mirabeau Lamar
Norman Richard Emond	Walter Edward Mendoza
Earl Nathaniel Gooding	Madieros Mooshagian
Phyllis Helen Green	Gerald Joseph Morin
Sigismund Haus	Beverly Howe Osborn
Vivian Sylvia Kajander	Robert Joseph St. George
Edward Aloysius Kennedy, Jr.	Donald Lynwood Smith

Candidates for the Degree of Master of Arts

Biology

Stanley Joseph Mann

Chemistry

Mary Agnes Doran
Herbert Isidor James
John Joseph O'Connell

Economics and Sociology

Alexander Agafonoff
Won Hoon Chung
William Joseph Dircks
James Moniz
Earl Thomas Steeves

Geography

Richard Arthur Ellefsen
Joseph Edward Hickey, Jr.
Edward Sheldon Kersch
Elaine Isabel Potter

History, Government, and International Relations

Richard Bagley
John Perez Burnham
Evelyn Weinstein Hyde
Daniel Roderick MacGilvray
Richard Haskayne McKey, Jr.
Robert Myron Mooradian
Myles Leo O'Donnell, Jr.
David Morris Roth
Helen Troy Young

Mathematics

Henry Adelard Maurais

Physics

Boris Sheleg

Psychology

Thomas Michael Casey
Richard Aaron Erle
Donald Marvin Isaac
Patricia Jo Nair
Susan Celistany Raymond
Laurence Cortelyou Smith, Jr.
Samuel Edward Stayton

Candidates for the Degree of Doctor of Philosophy

Chemistry

Haig Cadmus Donoian
Peter Joseph Drevinsky
Richard John Hovey
Alfred Joseph Richard

Economics and Sociology

Frederick Carl Miller

Geography

Lawrence Michel Delliquadri
Charles Nelson Forward
Woodford McDowell Garrigus
Sister Mary Ursula Hauk
William Luther Jeyasingham
Wilfred Gervais Myatt
Helen Leonore Smith
Jean Barbara Laing Vance
Cheng-Tsu Wu

History, Government, and International Relations

John Patrick Glennon

Psychology

Donald Monroe Broverman
Duilio Giannitrapani
Edward John Jordan, Jr.
Stanley Edward Kaden
Emma Kraidman

Conferring of Honorary Degrees

KUO-CHING LI

Presented by Charles Theodore Bumer

Doctor of Science

PAUL ALLMAN SIPLE

Presented by Samuel Van Valkenburg

Doctor of Science

EDWARD AUGUSTUS WEEKS

Presented by Karl Oscar Emanuel Anderson

Doctor of Humane Letters

ORDER OF AHEPA PRIZE FOR EXCELLENCE IN GREEK

Ha Poong Kim

THE LORING DODD PRIZE IN DRAMA

Rose Mandell Fisher

THE PRENTISS CHENEY HOYT PRIZE IN POETRY

Diane Barbara St. Jean

THE HOMER P. LITTLE AWARD IN GEOLOGY

David Lee Keim

THE SANFORD MEMORIAL SCHOLARSHIP

Helmut Wallenfels

Clark University
WORCESTER 10, MASSACHUSETTS

CLARK UNIVERSITY

Worcester, Massachusetts



Bulletin of the
Graduate School of Chemistry

Graduate School of Chemistry

CLARK UNIVERSITY

DEPARTMENT OF CHEMISTRY

PROFESSOR BULLOCK, PROFESSOR MARTELL, ,
PROFESSOR KEGELES, ASSOCIATE PROFESSOR SUGIHARA,
PROFESSOR AFFILIATE DORFMAN,
VISITING ASSISTANT PROFESSOR UNGAR.

Courses in chemistry fall into two groups:

First, those primarily for undergraduates. These furnish a foundation for professional work in chemistry or medicine, and are suitable for students desiring some knowledge of the subject as part of their general education.

Second, those primarily for graduate students.

GRADUATE WORK

The Department of Chemistry offers advanced courses in the fundamental principles of physical, organic, inorganic, radiochemistry and analytical chemistry, and these are supplemented by specialized courses and research work in physical and organic chemistry and radiochemistry. The graduate program is designed to lead to the degrees of Master of Arts and Doctor of Philosophy. Besides a successful completion of the fundamental courses offered in the graduate school, candidates for both degrees must show facility in conducting a laboratory investigation and a command of the subject which is chosen for the thesis or dissertation.

Graduate Fellowships and Scholarships

Scholarships, when granted, cover tuition, laboratory fees, and supplies. Teaching assistantships are available which require not more than six hours per week of the student's time, permitting fulltime work in the degree program. Other assistance is in the form of predoctoral fellowships sponsored by the university or by various research grants.



*Graduate students at work in instruments room devoted
to chelate chemistry*

Many students are awarded summer fellowships, enabling them to pursue their research work more actively than is possible during the regular school year.

Assistantships and fellowships are allotted individually on the basis of the student's record. The maximum rate, including summer work, is \$2000 per year in addition to remission of tuition (\$700) and laboratory fees, for an 11-month program.

The Department also offers several postdoctoral fellowships.

Sponsors of fellowships and research programs include Clark University, National Science Foundation, Research Corporation, National Institutes of Health, Dow Chemical Company, Atomic Energy Commission, Eli Lilly and Co., Carbide and Carbon Chemical Company, Esso Research Foundation and others.

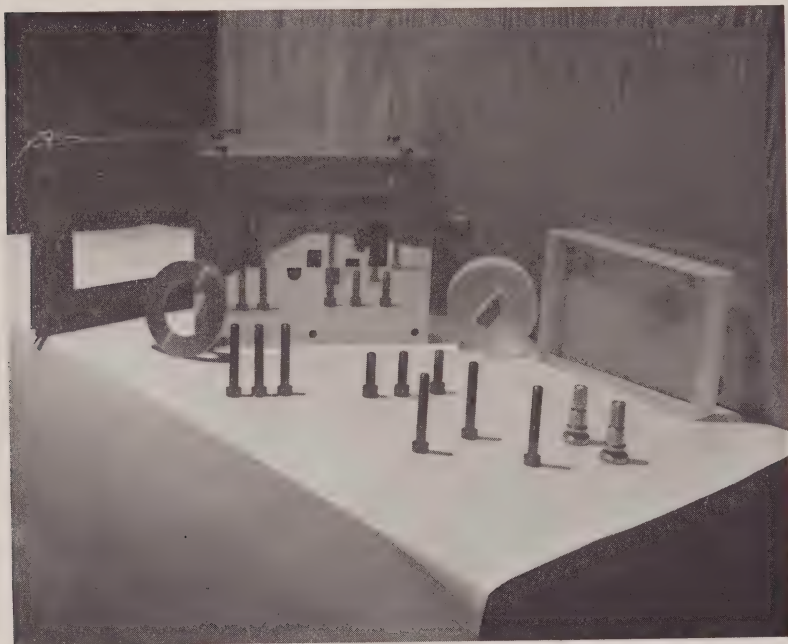
TRAINING PROGRAM FOR STEROID BIOCHEMISTRY

Recognizing the increasing importance of the steroid hormones in many fields of medical research, the National Cancer Institute of the National Institutes of Health, United States Public Health Service, has established grants for specialized training in steroid biochemistry at Clark University, in cooperation with the Worcester Foundation for Experimental Biology.

The training program consists of both intensive training in laboratory procedures and of lectures covering the theoretical and practical aspects of steroid technology. Two groups of candidates are selected each year for training awards. Stipends of \$1500 will be paid to ten individuals possessing a Bachelor's or Master's degree for a six month's period of training. Stipends of \$5000 will be paid to five individuals possessing an M. D. or Ph. D. degree for a one year period. The latter advanced group will have the opportunity to engage in basic research in the laboratory of an established investigator at the Worcester Foundation for Experimental Biology.

The lecture series of the training program consists of

five one-hour lectures per week for a sixteen week period starting in October. The lectures, to be given by staff members of Clark University, the Worcester Foundation, and selected guest lecturers, will include the fields of organic chemistry, physical chemistry (instrumentation) and steroid biochemistry. Opportunity to attend the lecture program will be offered to selected individuals by permission of the staff.



Fabry-Pérot interferometer cell for the study of liquid diffusion

RESEARCH

The department offers research work in organic, physical-organic, radiochemistry and physical chemistry in the following fields of investigation:

Synthesis and chemical properties of organic sulfur compounds and aromatic amines.

Synthesis of amino acids and other metal-ion complexing agents.

Dipole moments of metal chelate compounds.

Thermodynamic properties of metal chelate compounds.

Dissociation constants of weak electrolytes from electromotive force measurements.

Infrared and ultraviolet absorption spectra of metal chelate compounds.

Optical methods for the study of inhomogeneous liquids.

Diffusion of electrolytes, amino acids and peptides in water.

Ultracentrifuge studies of proteins, synthetic high polymers and smaller molecules.

Chromatographic analysis of proteins and their cleavage products.

Radiochemical studies of fission.

Chemical effects of nuclear transformations.

Radiochemical applications to analytical chemistry.

Modern research facilities include:

Superpressure hydrogenation apparatus, double-beam infrared recording spectrophotometer, ultraviolet recording spectrophotometer, precision conductivity bridge, precision capacity bridge for dielectric constants, recording polarograph, heavily shielded anti-coincidence low-level Geiger counter, scintillation spectrometer, interferometric Gouy diffusion apparatus, continuous recording Rayleigh interferometer, and optical ultracentrifuge.

Much of this equipment was specially designed and assembled in this laboratory. The Department has a student machine shop to handle small work. Excellent machine shop facilities in Worcester have produced large parts for equipment of original design.

Faculty

JESSE L. BULLOCK, Ph. D., Professor of Chemistry and Director of the Chemical Laboratories. A. B., Harvard University, 1914; A. M., 1928; Ph. D., 1932.

ARTHUR E. MARTELL, Ph. D., Professor of Chemistry. B. S., Worcester Polytechnic Institute, 1938; Ph. D., New York University, 1941.

GERSON KEGELES, Ph. D., Professor of Chemistry. B. S., Sheffield Scientific School, Yale University, 1937; Ph. D., Yale University, 1940.

THOMAS T. SUGIHARA, Ph. D., Associate Professor of Chemistry. A. B., Kalamazoo College, 1945; S. M. University of Chicago, 1951; Ph. D., 1952.

RALPH I. DORFMAN, Ph. D., Affiliate Professor of Chemistry, B. S., University of Illinois, 1932; Ph. D., University of Chicago, 1934; Associate Director, Worcester Foundation for Experimental Biology.

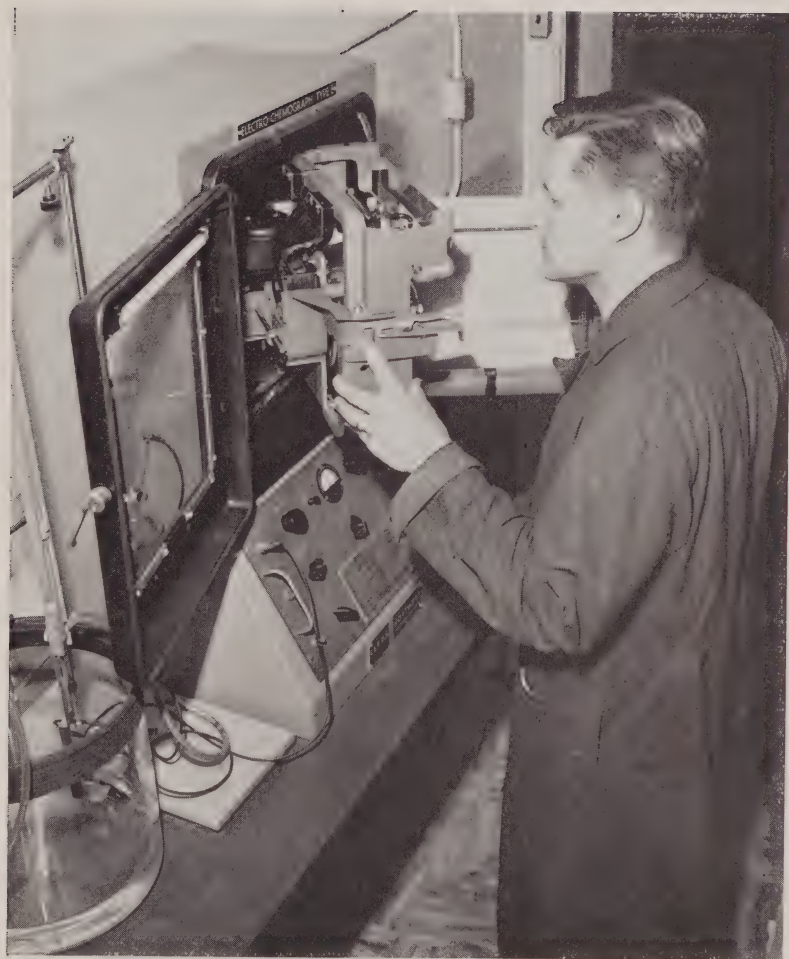
FRANK UNGAR, Ph. D., Visiting Asst. Professor of Chemistry, B. A. Ohio State University, 1943; Ph. D., Tufts College 1952.

Postdoctoral Fellows

ROBERT HOFSTETTER, Graduate Lucerne State School, Switzerland, 1947; Ph. D., University of Zürich, 1956.

M. S. NARASINGA RAO, B. Sc. (Honors), Mysore University, India, 1946; Ph. D., Poona University, 1956.

DAVID TODD, B.A. Swarthmore College, 1938; M.A. Harvard University, 1940; Ph. D. Harvard University, 1942.



Polarograph used in study of metal complexes

GRADUATE COURSES IN CHEMISTRY

All courses listed below are semester courses except 300, 350, and 380, given through the year.

300. *Research* The Staff

310. *Molecular Structure.*

Theories of electronic structure and relationship between chemical binding and physical properties of various substances. Dipole moments, magnetic properties, bond energies and stereochemistry of organic and inorganic compounds.

First semester. Mr. Martell

311. *Reaction Mechanisms.*

Electronic interpretations of chemical reactions, acid-base concepts and solution catalysis, free-radical and ionic mechanisms.

Second semester. Mr. Martell

Chemistry 310 and 311 offered together in alternate years.

320. *Advanced Physical Chemistry.*

Selected topics in physical chemistry described in detail: chromatography, electrochemistry, Debye-Hückel theory.

Second semester. Mr. Kegeles

321. *Colloid Chemistry.*

Osmotic and sedimentation equilibrium. Sedimentation velocity; diffusion.

First semester. Mr. Kegeles

322. *Thermodynamics.*

Applications of classical thermodynamics to chemical systems.

Chemistry 322 and 320 are offered together in alternate years.

First semester.

Mr. Kegeles

323. *Statistical Mechanics.*

Statistical mechanical analogs of thermodynamic functions and their application to chemical systems.

Second semester.

Mr. Kegeles

324. *Refractometric Techniques.*

Applications of refractometric methods to the study of optically inhomogeneous media. Methodology employed in electrophoresis, ultracentrifugation, diffusion and chromatography.

Second semester.

Mr. Kegeles

330. *Advanced Organic Chemistry.*

Effects of functional groups on synthesis.

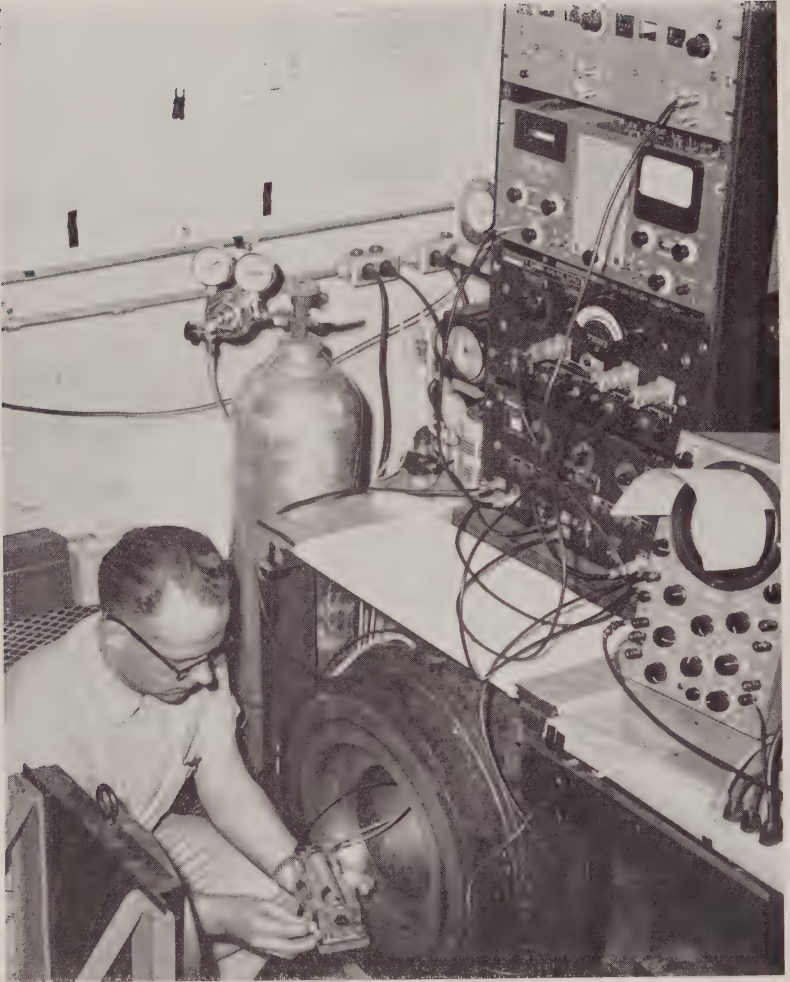
Mr. Bullock

331. *Organic Chemical Reactions.*

Lectures on the fundamental reactions in organic chemistry.

Chemistry 330 and 331 offered together in alternate years.

Mr. Bullock



Low-level anti-coincidence Geiger counter

332, 333. *Heterocyclic Compounds.*

Chemistry 332 and 333 offered together in alternate years.

Through the year.

Mr. Bullock

340. *Quantum Chemistry.*

Review of classical concepts and experiments from which quantum mechanics evolved, the old quantum theory, elementary quantum mechanics of simple systems, properties of wave functions, approximation methods for complex systems.

First semester.

Mr. Sugihara

341. *Quantum Chemistry and Advanced Inorganic Chemistry.*

Applications of quantum mechanics to atomic and molecular spectra, periodic classification of many-electron atoms, chemical and physical properties of atoms and simple ions as functions of electron structure, magnetic properties, kinetic theory and statistics.

Second semester.

Mr. Sugihara

Chemistry 340 and 341 are offered together in alternate years.

342. *Radiochemistry.*

Fundamentals of nuclear physics, including nuclear structure, modes of radioactive decay, interaction of nuclear particles with matter. Radiochemical techniques of production, isolation, and identification of radioactive atoms, introduction to techniques of preparation and measurement of radioelements, applications to problems in chemistry and physics.

First semester.

Mr. Sugihara

343. *Theories of Analytical Chemistry.*

Theories of titrations, indicators, and pH measurement, titration in non-aqueous solvents, equilibrium theory of chromatography, ion-exchange resins, solvent extraction, theories of gravimetric analysis, principles of some instrumental analytical methods.

Mr. Sugihara

345. *Selected Topics in Advanced Nuclear and Radiochemistry.*

Prerequisite: Chemistry 342.

Second semester.

Mr. Sugihara

350. *Seminar.*

Reports on research work and discussions of recently published work.

Guest Lecturers, Staff and Graduate Students

360. *Coordination Compounds.*

Lectures on the chemical properties of metal complexes, with emphasis on recent developments in the field of metal chelate compounds.

First semester.

Mr. Martell

361. *Principles of Instrumental Analysis.*

A study of the principles involved in the use of analytical instruments, including potentiometry, infrared and ultraviolet absorption spectrophotometry, and polarography.

Second semester.

Mr. Martell

380. *Research Conference.*

Informal reports of research work being done in the laboratory.

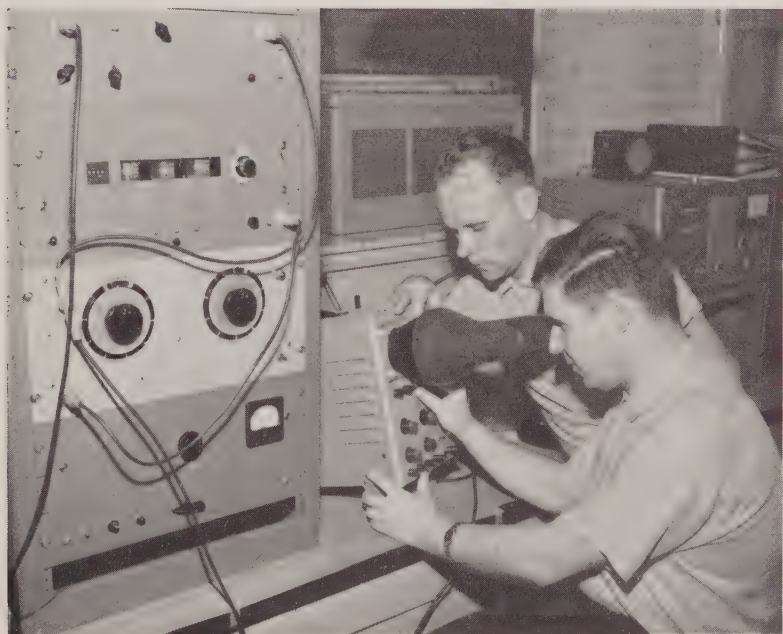
Staff and Graduate Students

390. *Special Graduate and Post-Graduate Course in Steroid Biochemistry.*

A training program for steroid biochemistry sponsored by the National Cancer Institute, U.S.P.H.S., at Clark University in conjunction with the Worcester Foundation for Experimental Biology, open to qualified personnel with advanced degrees, M. D., Ph. D., and graduate students.

Lecture series, by special permission.

Mr. Ungar, Staff, and guest lecturers.



Scintillation spectrometer and high frequency gynchroscope

COURSE REQUIREMENTS

All graduate students are required to demonstrate an adequate reading knowledge of French and German prior to entrance into candidacy for the Ph. D. degree. Although this requirement may be met as late as the time of completion of M. A. requirements, experience has demonstrated that failure of the student to fulfill these requirements early in the course of graduate studies can act as a serious deterrent to satisfactory progress. It is therefore recommended that entering students prepare themselves for examination in at least one language at the beginning of the first semester of graduate studies.

Students registered for advanced degrees are expected to spend not less than eighteen hours per week in the laboratory. This may include special laboratory work in organic, organic-physical, radiochemistry, or physical chemistry.

A total of 19 semester courses in chemistry are offered in addition to the seminar, conference, and research. At least eight semester courses are offered each year in addition to courses 350 and 380. Courses 310, 311, 320, 322, 330, 331, 340 and 341 are fundamental courses and are required for qualification for the Ph. D. degree.

The graduate program normally consists of six semester courses per year in addition to seminar and research, with the exception of the final year of Ph. D. candidacy, when it is generally expected that the student will be free to devote his major effort toward the completion of his research program. Two of these six courses may be taken in the related fields of mathematics and physics.

All graduate students normally participate in Chemistry 380, and participation in seminar, Chemistry 350, is required. Tuition is not charged for either course, because neither carries credit. Emphasis is placed on research work from the time of the student's entrance into the Department. A thesis is required for the master's degree as well as for the doctor's degree.

The length of time required for the master's degree is ordinarily three semesters because eight semester courses are required in addition to research work upon which the thesis is based. For the doctor's degree no time limit can be specified, but normally at least three years beyond the bachelor's degree are required for the completion of the research work.

The preliminary examinations that must be passed in order to be admitted to candidacy for the doctor's degree consist of two oral examinations. One of these is intended to be a literature survey in some area other than the one in which the student is conducting research. The subject is picked by the student.

The other examination is based on an original research problem proposed by the student. No limitations are placed on the area from which the problem can be drawn except that it cannot be a simple extension of the student's own research.

The first preliminary examination must have been passed before November 1 of the student's third semester at the University. For students entering the graduate school with a bachelor's degree the second examination must have been passed before November 1 of their seventh semester. For students holding master's degrees at the time of admission to the Graduate School, the second examination must have been passed not later than November 1 of their fifth semester.

It should be noted that according to university regulations the foreign language requirement, normally in French and German, must be satisfied before the preliminary examination requirement can be satisfied.

Since the length of time necessary to make satisfactory progress in the research is indeterminate, the student may complete the work for the doctor's degree without reference to the academic year. On completion of such work, the student receives a certificate from the department which

allows him to take up a position at once, and he then receives the formal diploma at the next commencement.

The requirements for the doctor's degree include a reading knowledge of French and German, preliminary oral examinations, and a dissertation followed by an oral defense when the dissertation is complete.

Publications

Some pertinent publications of present faculty members and their associates follow:

The Vapor Phase Nitration of Toluene, J. L. Bullock and E. T. Mitchell, *J. Am. Chem. Soc.* 63, 3230 (1941).

The Theory of an Interference Method for the Study of Diffusion, G. Kegeles and L. J. Gosting, *J. Am. Chem. Soc.* 69, 2516 (1947).

The Preparation and Properties of some N, N¹ - Disubstituted ethylenediaminedipropionic Acids, A. E. Martell and S. Chaberek, Jr., *J. Am. Chem. Soc.* 72, 5357 (1950).

A study of the Structure of a Sulfur Dye and its Intermediates, J. L. Bullock and B. Baum, *Abstracts of Doctoral Dissertations*, Clark University, 1950.

Influence of Fluorine Substitution on the Properties of Metal Chelate Compounds I. Copper (II) Chelates of Bidentate Ligands, R. Linn Belford, M. Calvin, and A. E. Martell; *J. Inorg. & Nuclear Chem.*, 2, 11 (1956).

Automatic Recorder for Interferometry and Refractometry of Streaming Solutions Applicable to Chromatographic Analysis, G. Kegeles and H. A. Sober, *Anal. Chem.* 24, 654 (1952).

Negative Pion Activation of Bromine, T. T. Sugihara and W. F. Libby, *Phys. Rev.* 88, 587 (1952).

Photonuclear Yields from Arsenic at 140 and 320 Mev, T. T. Sugihara and I. Halpern, *Phys. Rev.* 101, 1768 (1956).

Strontium-90 in North Atlantic Surface Water, V. T. Bowen and T. T. Sugihara, *Proc. Nat. Acad. Sci.*, July, 1957.

Thermodynamic Measurements of Ultracentrifuge Rotor Temperature, A. Biancheria and G. Kegeles, *J. Am. Chem. Soc.* 76, 3737, (1954).

Thermodynamic Quantities Associated with the Interactions between Ethylenediaminetetraacetate and Alkaline-Earth Ions, F. F. Carini and A. E. Martell, *J. Am. Chem. Soc.* 76, 2153 (1954).

Simultaneous Determination of Molecular Weights and Sedimentation Constants, S. M. Klainer and G. Kegeles, *J. Phys. Chem.* 59, 952 (1955).

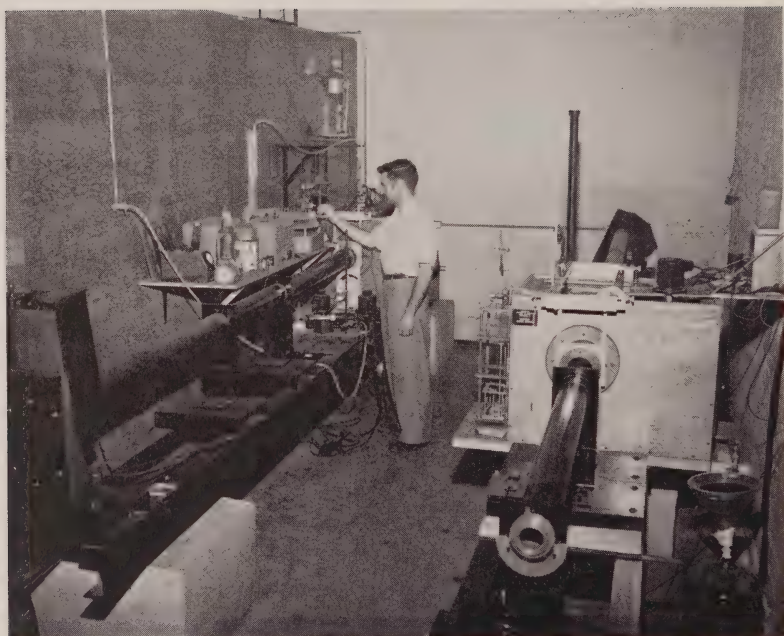
Decay Scheme of Natural Leutetium—176, J. R. Arnold and T. T. Sugihara, *Phys. Rev.* 90, 332 (1953).

Metal Chelate Compounds as Catalysts in the Hydrolysis of Isopropylmethylphosphorofluoridate and Diisopropylphosphorofluoridate, R. C. Courtney, R. L. Gustafson, S. J. Westerback, H. Hyytiainen, S. C. Chaberek and A. E. Martell, *J. Am. Chem. Soc.* 79 (1957).

Library Facilities

Clark University began as a Graduate School in 1887, dating in its opening only after the Johns Hopkins Graduate School in the United States. A number of Clark Graduate Departments, notable among them several of the sciences, began with outstanding research workers and research activities before the turn of the century. For example, the Nobel-prize winning studies of Michelson on the velocity of light were begun at Clark University, and one of Michelson's first interferometers is still in the possession of the Clark Department of Physics.

The Clark University library collection reflects these early activities in carrying most of the standard scientific reference journals back to their original issues, as well as the complete works of many outstanding scientists of the 18th century and earlier. The University library science collection is modern and up-to-date, providing a very useful reference source for Worcester area scientists.



Optical interferometric equipment for the study of liquid chromatography (left) and diffusion (right)

CLARK UNIVERSITY

Summer School—1958

Intersession, June 9 to June 28

Summer Session, June 30 to August 15



CALENDAR

JUNE

- 9 Monday, *Interession Registration* 9-12 NOON
First class meeting 2 P.M.
- 25 Wednesday, Registration for Evening classes
- 28 Saturday, Examinations for Interession courses 9-12 NOON
- 30 Monday, *Summer Session Registration* for day classes 9-12 NOON
Evening classes begin 6 P.M.

JULY

- 1 Tuesday, Day classes begin 8 A.M.
- 4 Friday, A holiday
- 22 Tuesday, Examinations in double courses concluding after first three weeks
- 23 Wednesday, Beginning of double courses of second three weeks

AUGUST

- 12 Tuesday, No classes
- 13 Wednesday, Examinations for classes meeting at 8 A.M.—9 to 12 NOON
for evening classes meeting at 6 P.M.—7 to 10 P.M.
- 14 Thursday, Examinations for classes meeting at 9:15 A.M.—9 to 12 NOON
- 15 Friday, Examinations for classes meeting at 10:30 A.M.—9 to 12 NOON
for classes meeting at 11:45 A.M.—2 to 5 P.M.
for evening classes meeting at 8 P.M.—7 to 10 P.M.

1958

JUNE						
SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

JULY						
SUN	MON	TUE	WED	THU	FRI	SAT
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6	7	8	9	10	11	12
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20	21	22	23	24	25	26
27	28	29	30	31		

AUGUST						
SUN	MON	TUE	WED	THU	FRI	SAT
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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Clark University SUMMER SCHOOL

Worcester, Massachusetts

Intersession, June 9 to June 28

Summer Session, June 30 to August 15

1958

Officers of Administration

HOWARD B. JEFFERSON, *President of the University*

ROBERT M. HYDE, *Vice President of the University*

ROGER C. VAN TASSEL, *Director of the Summer School*

The BULLETIN is published in January, February, August, September and October.

Entered as second-class matter December 29, 1920, at the Post Office at Worcester, Mass., under the Act of August 24, 1912. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized January 24, 1921.

A Unique Opportunity to Learn

The informal atmosphere of small classes working at courses they enjoy typifies the opportunity offered by the 1958 Clark University Summer School. Intensive instruction is offered in a broad variety of liberal arts, business administration and education courses; the pleasant New England summer does not deter students or faculty from their essential purposes. Superior teaching and able students meeting in an attractive environment combine to make for effective learning.

Active participation by the students in class discussions is encouraged. Discussions may relate to assigned reading, or to a play or concert just attended by the group as part of the course. If the group is larger, it may be the whole Summer School at the weekly afternoon punch party lecture-discussions, where a faculty member or a visitor takes the floor or, more literally, the grass to explain and expound a thesis which he will then defend before all questioners. If the campus seems empty, chances are that most have gone to attend a concert at Tanglewood, or to visit the Jazz Festival at Newport, or to a baseball game in Boston, or just swimming at one of the many fine ponds and lakes near by.

No one is gone for too long. The faculty members have their minds on the business at hand, and they will plan final examinations where those studying for degree credits can demonstrate that they have earned them.

SPECIAL PROGRAMS

Many students attend the Clark University summer sessions to accelerate their degree work or to make up a missing course. In this summer's offerings there are some special programs of interest. James S. Edwards, Associate Professor of German, will again offer a General Education course for credit by taking a small group on a European tour. This group will give special attention to the cultural and arts centers.

Bright high school students who have already been accepted at college will have an opportunity to do some of their freshman work before the opening of the regular school year. Intensive courses in mathematics, English and languages will permit these students to take advanced courses when they enter college or to exempt some required courses.





There is a wide variety of courses available for teachers who seek professional advancement. The selection of subject matter courses is excellent, and several education courses will be offered. In addition, Professor Henry J. Warman will conduct an informal, bi-weekly seminar on geography in the teaching of social studies.

Relly Raffman, Assistant Professor of Music, will teach Twentieth Century Music. He plans class field trips for concerts at Tanglewood, Castle Hill, the Newport Jazz Festival, and Esplanade Concerts in Boston, and he will organize a chorus open to all Summer School students. Professors Donald H. Letendre and Edward H. Hastings will also plan group trips to near-by summer stock theaters and concerts as part of their drama and music courses. These and other trips will be open to all Summer School students.

Evening classes in liberal arts and business courses will be offered for those who have summer jobs and wish to attend school at the same time, as well as to those who are continuing their studies in the Clark University Evening College.

Clark University has an excellent library which employs the open shelf system with an opportunity for unlimited browsing of the large and varied collection of modern books, professional periodicals and an unusually large map collection. The athletic facilities of the University, including unusually fine tennis courts, will be available for use by Summer School students.

DEGREES AND CREDITS

All courses offered are accepted at Clark for credit toward the degrees of Bachelor of Arts and Bachelor of Business Administration, or either of the Evening College degrees unless specifically limited to one of the degrees as stated in the course description. Many courses in the Summer School count toward the degrees of Master of Arts, Master of Arts in Education, and Doctor of Philosophy. Approval should, however, be obtained in advance from a student's major department.

The degree of Master of Arts may be obtained in certain fields by completing satisfactorily a full-time program for five summers. It is best for students interested in such a program to discuss their plans directly with the Chairman of the department concerned. Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the Staff other than those listed in the present Bulletin.

Each single course offered in the Summer School is equivalent to a half-year course of the academic year and yields three semester hours of credit. The double courses in the languages, statistics and mathematics which meet for two lecture periods a day for six and one-half weeks are equivalent to year courses (six semester hours credit).

Intersession courses meet for two 70 minute periods at 9:00 A.M. and at 2:00 P.M., Monday through Friday. Summer Session courses during the day meet for one 70 minute period Monday through Friday. Double courses meet for two 70 minute periods five days a week. Evening classes meet for 110 minutes on Monday, Wednesday and Friday evenings. Exceptions to the above time schedule are listed under course descriptions.

A student may carry in a normal program one course in the Intersession (three semester hours) and two courses in the Summer Session (six semester hours). Permission to carry an additional course may be granted only in exceptional cases if approved in writing prior to registration. Course changes after the third day of classes must be approved by the Director.

A transcript of a student's Summer School record is available free of charge, but application for it should be made in the Summer School office.

TUITION AND FEES

A matriculation fee of \$5.00 is required of all students entering Clark University for the first time. The tuition for each three semester hour course is \$70.00. Persons who wish to audit a course without receiving credit register and pay tuition at the stated rate. Students carrying two courses during the Summer Session may audit a third course without additional cost. Tuition and fees must be paid in the Summer School Office immediately following registration. A fee for late registration of \$3.00 must be paid by students who fail to complete registration within the official Registration Period.

Students who attend not more than three days of classes in either the Intersession or Summer Session and are forced to withdraw with just cause, may receive a refund of their tuition on applying in writing to the Director of the Summer School. Students of the Summer Session who are forced to leave before the beginning of the second week may expect a refund of two-thirds of their tuition, those who leave before the beginning of the third week may have one-third of their tuition refunded. Students leaving after the

beginning of the third week of classes are not entitled to any refund.

Students leaving after the third day of classes will automatically receive a grade of failure unless they petition the College Board for special consideration.

LIVING FACILITIES AND COSTS

Dormitory facilities for both men and women are available, but reservations should be made promptly on or before June 1. Room rent is \$15.00 for the Intersession and \$35.00 for the Summer Session. A room and key deposit of \$10.00 is required in advance to hold a room. This deposit is not part-payment for the rent. The \$10.00 will be returned in full if the room is undamaged when the key is returned.

VETERANS

Veterans attending the 1958 Summer School should present their supplemental Certificate of Eligibility at the Veterans' window in the Bursar's Office not later than Friday of the first full week of the term. The Director of the Summer School should be consulted when unusual or unexpected situations arise.

Veterans are reminded that Certificates of Eligibility held during the Spring Semester 1958 do not apply to the Summer School and that a new application must be completed for the course of summer study.

ELIGIBILITY FOR COURSES

Courses beginning with "1" are open to all undergraduates except freshmen. Courses preceded by an "F" are open to freshmen. Courses beginning with "2" are open to advanced undergraduates and graduate students. Teachers working toward degrees or credits in Education should consult with Professor Vernon Jones, Chairman of the Department of Education.

COURSE OFFERINGS

Biology

Intersession

F.—BIO.—S.17 GENERAL ECOLOGY

Rudolph F. Nunnemacher, *Professor of Biology*

An introductory study of the distribution of plants and animals, their interrelationships and adaptations to such a wide variety of environments as the seashore, sand dunes, woodlands, and ponds. Field trips to Mt. Monadnock, the virgin forest at Bradford, N. H., the North Shore, and the Barnstable dunes on Cape Cod will be taken on Saturdays. Previous courses in Biology are helpful but not required. This course should prove equally valuable to students now in college, to teachers of Natural Science, and to others who have a general interest in that field.

Travel and laboratory
fee: \$10.00

Mon. through Fri. at 9:00 and 2:00; short field trips
or laboratory, Tues. and Thurs., 2:00–5:00 P.M.

Summer Session

BIO.—S.130 MICROBIOLOGY

John T. Reynolds, *Assistant Professor of Biology*

An introduction to some of the phenomena and relationships encountered in a study of the bacteria, yeasts, molds and viruses. The laboratory sequence has been designed to familiarize the student with certain techniques fundamental to the study of bacteria.

Clark Hall 202
Laboratory fee: \$10.00

Mon. through Fri., 8:00–9:10 A.M.
Labs. Tues. and Thurs., 2:00–4:00 P.M.

~~BIO.—S.221 EMBRYOLOGY~~

~~Rudolph F. Nunnemacher, *Professor of Biology*~~

~~A course for advanced students in biology which considers the fundamental processes of vertebrate development.~~

~~Clark Hall 202
Laboratory Fee: \$10.00~~

~~Mon. through Fri., 10:30–11:40 A.M.
Labs. Tues., Wed., and Thurs., 1:00–4:00 P.M.~~

BIO.—S.244 BIOCHEMISTRY

Harris Rosenkrantz, *Staff Member,
Worcester Foundation for Experimental Biology*

The principles and mechanisms of biochemical reactions in an understanding of the metabolism of foodstuffs and the role of enzymes, vitamins and hormones. An acquaintance with the instrumentation in biochemical research will be presented. The course will include laboratory demonstrations with student participation, field trips to the Worcester Foundation, student seminars and guest lecturers. Prerequisite: Organic Chemistry.

Clark Hall 206

Mon. through Fri., 8:00–9:10 A.M.

BIO.—S.370 RESEARCH IN BIOLOGY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Business Administration*Intersession***B.A.—S.170 MANAGEMENT OF SMALL BUSINESS**Paul H. Levenson, *Assistant Professor of Business Administration*

An examination of the problems faced by management in the organization and operation of a small manufacturing or service enterprise, with emphasis on desirable forms of organization, financing a new business, initial operation, personnel selection and training, human relations in small industry, analysis and evaluation of old and new markets, procurement, production control, methods, cost control and pricing, and governmental regulation and assistance. The case study method will be employed to some extent. Lectures will be supplemented by guest speakers and discussions. (This course may not be counted toward the A.B. degree, but only toward a business degree.)

Clark Hall 220

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

B.A.—S.183a MANAGEMENT-LABOR RELATIONSF. Eugene Melder, *Professor of Economics and Sociology*

The subject matter of the course is management-employee relationships with special reference to union and management bargaining, shop industrial situations and the law of labor relations. Discussion and case methods are employed.

Clark Hall 215

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

*Summer Session****B.A.—S.16 BUSINESS STATISTICS**George E. Hargest, *Associate Professor of Business Administration*

This course is designed to give the student a knowledge of the basic statistical techniques and procedures as they are applied to business and economic data. Lectures and laboratory exercises.

Clark Hall 217

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

F.—B.A.—S.17 PUBLIC SPEAKINGJames F. Beard, Jr., *Associate Professor of English*

For course description see section on English.

(Candidates for the B.B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. Eng.—S.12.)

Clark Hall 106

Mon., Wed. and Fri., 8:00–9:50 P.M.

B.A.—S.109 SALES MANAGEMENTGeorge A. Balko, Jr., *Assistant Professor of Business Administration*

An examination of the problems of organizing and directing the efforts of a sales force. This involves the establishment of a sales plan, the place of the sales department in the company, the formulation of sales policies and the organization of the sales department; recruiting, training, equipping, motivating, compensating and measuring performance of salesmen. (This course may not be counted toward the A.B. degree, but only toward a business degree.)

Clark Hall 109

Mon. through Fri., 9:15–10:25 A.M.

*Double Course, two classes daily, through summer session.

B.A.—S.125b RETAILING PRINCIPLESGeorge A. Balko, Jr., *Assistant Professor of Business Administration*

A survey of the major phases of retailing including discussions of the retailer in our economy, the store and its organizations, aspects of buying and selling, operating activities and personnel, and retail control. For business degree only.

Clark Hall 215

Mon. through Fri., 10:30–11:40 A.M.

B.A.—S.131 HUMAN RELATIONS AND POLICY MAKING IN BUSINESS (Soc.—S.131) AND INDUSTRYFrederick W. Killian, *Associate Professor of Sociology*

This is a study of the human use of human beings in the field of business and industry. Of the recent findings of the social sciences as they pertain to this area of work and life. Of the relations of business and industry to the family, law, religion and other institutional operations. Basic sociological and social psychology concepts and ideas will be applied to the analysis of cases. Emphasis is placed on the study of cases (actual experiences in the operation of business and industry) by student participation in reporting and analyzing cases and of the analysis of the cases by applying social concepts to them. A book of cases in the field will be used which combines the cases with the fundamental ideas necessary for their analysis.

(Not a substitute for Industrial Sociology in the academic year.)

Counted as a course for the sociology major in the academic year. Also counted as a business course for the B.B.A. degree. Open by permission of the instructor.

Clark Hall 215

Mon. through Fri., 11:45 A.M.–12:55 P.M.

B.A.—S.181a INDUSTRIAL MANAGEMENTPaul H. Levenson, *Assistant Professor of Business Administration*

A study of the techniques of the executive control of manufacturing operations with special reference to such fields as specialization of labor, simplification and diversification of products, expansion, control of factors of production, and internal organization. The case method is used to some extent. For business degree only.

Clark Hall 217

Mon., Wed. and Fri., 8:00–9:50 P.M.

Economics*Summer Session***EC.—S.13 MONEY AND BANKING**John F. Brothwell, *Visiting Lecturer, Clark University;*
Lecturer, Leeds University

The principles of money and banking; characteristics of the American monetary and banking system; theoretical relations of money, prices, income.

Clark Hall 218

Mon., Wed. and Fri., 6:00–7:50 P.M.

EC.—S.211b COMPARATIVE ECONOMIC SYSTEMSJohn F. Brothwell, *Visiting Lecturer, Clark University;*
Lecturer, Leeds University

A comparative analysis of economic systems such as capitalism, socialism, and fascism followed by a consideration of these systems as currently or recently found to exist in specific nations.

Clark Hall 218

Mon., Wed. and Fri., 8:00–9:50 P.M.

EC.—S.28 RESEARCH IN ECONOMIC PROBLEMS

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Education

Summer Session

ED.—S.20 GEOGRAPHY IN EDUCATION

Henry J. Warman, *Professor of Geography*

For course description see section on Geography.

ED.—S.201B EDUCATIONAL PSYCHOLOGY

Vernon Jones, *Professor of Educational Psychology*

A study of the psychological principles of learning and teaching in the schools. Attention will be given to maturation and learning as they relate to emotional, social, and intellectual development. The problem of individual differences and the early identification of special abilities will receive attention. Procedures will include class discussion, readings, and attention to individual teaching problems upon which the students of the class may desire assistance.

Clark Hall 304

Mon. through Fri., 9:15–10:25 A.M.

ED.—S.225 A DEMONSTRATION IN METHODS AND MATERIALS IN TEACHING

Henry C. Borger, Jr., *Associate Professor of Education*

A series of carefully planned and evaluated experiences in the observation of children's activities utilizing modern methods and materials in an actual classroom situation. Attention will be given to several methods of approach particularly the unit. Observation of the dynamic classroom in action will enable the student to acquire first-hand knowledge of the nature and needs of the growing child on the junior high school level. Application will be made to elementary and high school teaching. Although essentially a demonstration experience, the course will include the theory behind the practice that is observed.

Clark Hall 209

Mon. through Fri., 10:30–11:40 A.M.

ED.—S.228 GUIDANCE AND EVALUATION

Vernon Jones, *Professor of Educational Psychology*

A study of the techniques basic to educational and vocational guidance and counseling. Attention will be given to the more important methods of pupil evaluation upon which counseling can be based. This will include a brief study of tests and other methods of evaluation, and experience in psychological interpretation of these data in forms suitable for use in guidance in school. Special emphasis will be given to actual case material supplied by the instructor and others. Opportunities will be provided for members of the class to get practice in test interpretation and guidance.

Clark Hall 304

Mon. through Fri., 11:45 A.M.–12:55 P.M.

ED.—S.290b PHILOSOPHY OF EDUCATION

Robert N. Beck, *Associate Professor of Philosophy*

An examination of aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems.

Clark Hall 106

Mon. through Fri., 8:00–9:10 A.M.

English

Intersession

F.—ENG.—S.11a ENGLISH COMPOSITION AND LITERATURE

Karl O. E. Anderson, *Associate Professor of English*

The purpose of English 11 is to develop clarity and accuracy in reading and writing. After a short review of the principles of rhetoric, the course will be devoted to the study of expository essays and short stories. Themes and individual conferences. This course, together with English 11b, is a requirement for the Clark A.B.

Clark Hall 301

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

ENG.—S.103 THE COMIC SPIRIT IN ENGLISH AND AMERICAN LITERATURE

William H. Carter, Jr., *Associate Professor of English*

The Comic Spirit will be studied in selected poems, plays, novels, short stories, and essays from Geoffrey Chaucer (in Modern English) to twentieth century writers such as G. B. Shaw, Evelyn Waugh, and James Thurber.

Clark Hall 212

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

F.—ENG.—S.12 PUBLIC SPEAKING

James F. Beard, Jr., *Associate Professor of English*

A course in the fundamentals of public speaking, emphasizing both the composition and delivery of the most common types of speeches, such as introductory, expository, and impromptu speeches. Special attention will be given to problems of human relations, voice tests, vocabulary development, and the acquisition of self-confidence, poise, and effective communication techniques. Practice speeches, conferences, and voice recordings to enable the student to recognize and correct his speech deficiencies. (Candidates for the B.B.A. degree should use course No. B.A.—S.17; candidates for the A.B. degree should use the course No. Eng.—S.12.)

Clark Hall 106

Mon., Wed. and Fri., 8:00–9:50 P.M.

ENG.—S.106 CONTEMPORARY AMERICAN FICTION

James F. Beard, Jr., *Associate Professor of English*

A critical introduction to the best American fiction since about 1900, with emphasis on its esthetic values, sociological insights, and philosophic implications. Authors read and discussed will include Henry James, Theodore Dreiser, F. Scott Fitzgerald, Sherwood Anderson, Thomas Wolfe, John Steinbeck, Ernest Hemingway, and William Faulkner.

Clark Hall 106

Mon., Wed. and Fri., 6:00–7:50 P.M.

ENG.—S.111 SURVEY OF AMERICAN LITERATURE (SINCE 1865)

Donald H. Letendre, *Assistant Professor of English*

An introduction to representative American writers from 1865 to the present. The course focusses primarily on the rise of realism and naturalism in fiction (local colorists, Twain, Howells, Lewis, and Hemingway) and on the development of modern poetry (Dickinson, Robinson, Frost, Sandburg, and Eliot). Intellectual currents and literary trends are emphasized as well as the close examination of a few selected works.

Clark Hall 301

Mon. through Fri., 9:15–10:25 A.M.

ENG.—S.126 MODERN AMERICAN AND BRITISH DRAMA

Donald H. Letendre, *Assistant Professor of English*

A survey of the development of modern drama, stressing play structure, the main types of drama, and various experimental techniques in contemporary plays. Shaw, Barrie, O'Neill, Eliot, and Williams will be studied as key figures. Critical reading and discussion, recordings of contemporary plays, and, for those who wish, the opportunity to write an original one-act play.

Clark Hall 301

Mon. through Fri., 10:30–11:40 A.M.

Fine Arts

Intercession

F.A.—S.122 AN INTRODUCTION TO SYMPHONIC MUSIC

Edward H. Hastings, *Lecturer, Clark University Evening College*

This course is designed to give the student a better understanding of symphonic music by tracing its development from the time of Bach to the present. In addition to the study of representative orchestral works by Bach, Haydn, Mozart, Beethoven, Brahms, Mendelssohn, Liszt and Wagner, the course will include a general study of the makeup and development of the modern symphony orchestra and an introduction to score-reading. Students will be expected to spend at least one hour daily outside of class listening to recordings of the works to be discussed. Satisfies Fine Arts requirement.

Atwood Hall

Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

F.—F.A.—S.13a TWENTIETH CENTURY MUSIC

Relly I. Raffman, *Assistant Professor of Music*

An examination of the works of Debussy, Ravel, Stravinsky, Hindemith, Schönberg, Bartok, and other significant composers whose works have been the driving force behind the tonal advances of the past fifty years. The influence of jazz on both American and European Music will be discussed, as well as jazz in its pure state. Field trips to Tanglewood, Castle Hill and other summer music festivals will be made whenever possible.

Atwood Hall

Mon. through Fri., 11:45 A.M.–12:55 P.M.

General Education

F.—S.144 INTRODUCTION TO WESTERN CIVILIZATION

James S. Edwards, *Associate Professor of German;
Director of Dramatics*

A lecture-study tour of Europe which will combine the customary formal instruction with exposure to places and scenes in which Western Man's experience actually took place. Included will be a survey of the West's institutional development and cultural life with emphasis on his expressive forms and activities in Art, Literature and Music.

The 53-day land tour will visit France, England, Belgium, Germany, Austria, and Italy and will span our cultural and social heritage from Greco-Roman times through the Renaissance to the present. Introductory lectures will be held on shipboard to the continent. Each student will take a three hour examination held on the last two days of the return voyage. Three semester hours credit, which will fulfill the Fine Arts requirement. Because of the limited enrollment and demand an early application is necessary. Applications must be completed and the inclusive

fee of \$1125 must be paid by May 1, 1958. Sailing date: July 2 from New York. Return to New York September 8. Further information may be obtained from the Summer School office.

Geography

Summer Session

F.—GEO.—S.10a PRINCIPLES OF GEOGRAPHY

Henry J. Warman, *Professor of Geography*

An introductory course dealing primarily with the physical phases of geography with application to some regions throughout the world.

Geography Bldg., Lecture Room Mon. through Fri., 11:45 A.M.—12:55 P.M.

GEO.—S.20 GEOGRAPHY IN EDUCATION

Henry J. Warman, *Professor of Geography*

A survey of geography in the present-day American school system, designed to meet the needs of those expecting to teach and those already teaching geography. Techniques of teaching geography will be stressed.

Geography Bldg., Lecture Room Mon. through Fri., 9:15–10:25 A.M.

GEO.—S.30 SEMINAR ON GEOGRAPHY IN SOCIAL STUDIES

Henry J. Warman, *Professor of Geography*

A seminar on the geographic approach to social studies teaching. Two afternoons a week, to be arranged. See Dr. Warman. Non-credit.

F.—GEO.—S.191 CARTOGRAPHY

Guy H. Burnham, *Instructor in Geography, Cartography*

A discussion of various graphic methods and their application to geographic data. Since emphasis will be placed upon the mastery of cartographic tools and instruments, this course should prove particularly helpful to those planning to enter government service or to do illustrative work. This course may be taken for double credit by special arrangement with the instructor.

Geography Bldg., Mon. through Fri., 1:30 P.M. and afternoon workshop
Cartography Lab.

GEO.—S.201b PROBLEM AREAS IN THE WORLD: A POLITICAL GEOGRAPHIC EVALUATION

Samuel Van Valkenburg, *Professor of Geography*

This course covers the problem areas of the world, their causes and possible solutions, seen from the American point of view. It discusses such problems as the Arabs in North West French Africa, the controversy Israel versus the Arab States, the Kashmir case, the tendency toward the forming of a bloc of neutral states, the chance for unity in Germany and many others. All these are of vital importance not only to the peoples directly involved but also to the United States which tries to preserve peace in the world. (No prerequisites.)

Geography Bldg., Lecture Room Mon. through Fri., 8:00–9:10 A.M.

GEO.—S.285a GEOGRAPHY OF EUROPE

Samuel Van Valkenburg, *Professor of Geography*

An evaluation of the nations of Europe west of the Iron Curtain: their assets and liabilities. Special emphasis will be on the Common Market (economic coopera-

tion between France, West Germany, Italy and the Lowland Countries) as well as on the proposed Free Trade Zone. (Professor Van Valkenburg spent the second part of 1957 in Europe to study the problem of European cooperation.)

Geography Bldg., Lecture Room Mon. through Fri., 10:30-11:40 A.M.

GEO.—S.291 CARTOGRAPHY

Guy H. Burnham, *Instructor in Geography, Cartography*

Similar course to S.191 with additional work required for graduate credit.

Geography Bldg., Mon. through Fri., 1:30 P.M. and afternoon workshop
Cartography Lab.

GEO.—S.300 RESEARCH IN GEOGRAPHY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

History and Government

Interession

HIST.—S.130a POLITICAL HISTORY OF THE UNITED STATES

Herbert J. Bass, *Visiting Lecturer, Instructor in History, University of Maine*

A study of the historical development of the Presidency, Congress, the Supreme Court and the Party System since the adoption of the Constitution, together with an examination of the outstanding personalities and issues in American political life from Washington to Eisenhower. Lectures will be supplemented by individual reports and discussion.

Clark Hall 209 Mon. through Fri., 9:00 A.M. and 2:00 P.M.

HIST.—S.213 EUROPEAN DIPLOMATIC HISTORY, 1848-1918

Dwight E. Lee, *Professor, Modern European History*

Using as a basic text, A. J. P. Taylor, *Struggle for the Mastery of Europe, 1848-1918*, the course will survey the diplomatic history of Europe and some of the major issues over which the great powers of Europe came into conflict.

Clark Hall 218 Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

GOV.—S.25a COMPARATIVE GOVERNMENT

Morris H. Cohen, *Associate Professor of Government*

A study of the governments and politics of Great Britain and the major European powers.

Clark Hall 302 Mon. through Fri., 8:00-9:10 A.M.

HIST.—S.231 AMERICAN COLONIAL HISTORY 1607-1775

George H. Merriam, *Lecturer, Clark Evening College*

A survey course with particular emphasis upon the New England area from the time of the first settlements to the revolutionary period. America's colonial past will be studied through lectures and original documents. Texts for the course will be Wright's "Atlantic Frontier," and Nettles' "Foundation of American Civilization."

Clark Hall 220 Mon., Wed. and Fri., 6:00-7:50 P.M.

HIST.—S.233 THE WEST IN AMERICAN HISTORY

Henry C. Borger, Jr., *Associate Professor of Education*

Beginning about the time of the American Revolution when the line of the frontier was at the Appalachian Mountains, this course will trace the movement of population, the growth of settlements, and the development of the American institutions as they advanced toward the Pacific Ocean. Social, geographic, and economic factors will be included with this historical study, which will conclude with a consideration of the influence of this westward movement on the American past and present.

Clark Hall 209

Mon. through Fri., 9:15–10:25 A.M.

HIST.—S.237 ECONOMIC HISTORY OF THE UNITED STATES SINCE 1815

Gerald N. Grob, *Instructor, American History*

This course will deal with the economic forces and institutions which have transformed America from an agricultural country into the world's leading industrial power. These developments will be related to the political, social, and intellectual life of America. Major topics to be considered are the industrial, transportation, and agricultural revolutions, financial and banking institutions, the development of trusts, the labor movement, and the role and growth of governmental regulation of major economic institutions.

Clark Hall 220

Mon. through Fri., 10:30–11:40 A.M.

HIST.—S.238 NEW VIEWPOINTS IN AMERICAN HISTORY

Gerald N. Grob, *Instructor, American History*

Particularly designed for secondary school teachers of history and the social sciences as well as history majors, this course will, through readings and discussion, concern itself with some of the recent literature in the field of American History, especially in those areas where new interpretations or points of view have been expressed. Among the topics discussed will be: The Puritans, the Confederation Period, The Age of Jackson; The Causes of the Civil War; The Age of Enterprise; The Progressive Movement; American Foreign Policy since 1900; and Recent Biographical Literature.

Clark Hall 220

Mon. through Fri., 11:45 A.M.–12:55 P.M.

GOV.—S.300 READING AND RESEARCH IN HISTORY AND GOVERNMENT
HIST.—S.300

Reading or thesis courses for graduate students to be arranged with staff members.

LANGUAGES

French

*Summer Session**F.—FR.—S.12 INTERMEDIATE FRENCH *Loretta Wawrzyniak*
Theodore Nicol, Associate Professor of Romance Languages
Additional instructor to be announced

This course aims to develop all the fundamental skills—pronunciation, conversation, grammar, reading—necessary as a basis for any effective use of the language. The approach will be conversational insofar as practicable. Carefully graded readings will be chosen primarily for affording insights into the culture of France. Open to students who have had the elements of French in a first-year college course or the equivalent. Indivisible course.

Clark Hall 104

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

*Double Course, two classes daily, through summer session.



***FR.—S.14 READINGS IN FRENCH LITERATURE**

Theodore Nicol, *Associate Professor of Romance Languages*
 Additional instructor to be announced

A third-year course, designed first to perfect the student's techniques of reading, and second to give an understanding of a number of French works of universal importance and appeal. Open to students who have had a second-year college French course or the equivalent.

Clark Hall 106

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

German***F.—GER.—S.11 INTRODUCTORY GERMAN**

Harry Zohn
~~Karl J. Arndt, Professor of German~~
 Brandeis Univ.

The regular material of the first year of college German is covered: pronunciation, basic vocabulary, elements of grammar, composition, and reading of suitable German prose. An intensive course for students interested in devoting full time and complete attention to the study of German during the summer session.

Clark Hall 304

Mon. through Fri., 8:00 and 11:45 A.M.

***F.—GER.—S.12 INTERMEDIATE GERMAN**

Francis Tourtellot
~~Instructor to be announced~~

Review of grammar, translation from and into German, rapid reading of modern German prose. An intensive course covering the material of the regular second year of college German. The course will demand the full time and attention of those interested.

Clark Hall 303

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

Spanish***F.—SP.—S.11 INTRODUCTORY SPANISH**

Raymond E. Barbera, *Assistant Professor of Romance Languages*

For beginners. The elements of grammar and pronunciation; carefully graded reading; exercises in speaking and writing.

Clark Hall 220

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

***F.—SP.—S.12 INTERMEDIATE SPANISH**

Instructor to be announced

This course aims to develop all the fundamental skills—pronunciation, conversation, grammar, reading—necessary as a basis for any effective use of the language. The approach will be conversational insofar as practicable. Carefully graded readings will be chosen primarily to afford some insights into Hispanic culture, of both Spain and Spanish America. Open to students who have had the elements of Spanish in a first-year college course or the equivalent. Indivisible course.

Clark Hall 218

Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

*Double Course, two classes daily, through summer session.

Mathematics

Summer Session

*F.—MATH.—S.11 FRESHMAN MATHEMATICS

Charles T. Bumer, *Professor of Mathematics*

Careful attention is given to fundamental concepts and to the development of useful techniques. Topics in algebra, trigonometry and analytic geometry are introduced. Emphasis is placed on mathematics as a way of thinking, not as a mere collection of bits of useful information and devices.

The course is brought to the attention of students who have just graduated from high school, especially if their records in mathematics are good. Students who acquit themselves well in the course will be in a strong position to enter a good course in calculus.

Clark Hall 212 Mon. through Fri., 9:15–10:25 A.M. and 2:00–3:10 P.M.

Philosophy

Intersession

PHIL.—S.116 READINGS IN EXISTENTIALISM Robert N. Beck

Geoffrey Clive, ~~Assistant~~ *Professor of Philosophy*
~~Associate~~

Selected readings of major figures in existentialist thought from Dostoevski to Sartre. (No prerequisites.)

Clark Hall 303 Mon. through Fri., 9:00 A.M. and 2:00 P.M.

Summer Session

PHIL.—S.121 CLASSICAL AMERICAN PHILOSOPHERS

Robert N. Beck, *Associate Professor of Philosophy*

Study and discussion of selections from the writings of the six classical American philosophers: C. S. Peirce, William James, Josiah Royce, John Dewey, Alfred North Whitehead, George Santayana. Various aspects of their thought will be examined and compared, and their relation to the Americanism of their times will be noted.

Clark Hall 102 Mon. through Fri., 9:15–10:25 A.M.

PHIL.—S.290b PHILOSOPHY OF EDUCATION

Robert N. Beck, *Associate Professor of Philosophy*

The course description is given under Education.

Clark Hall 106 Mon. through Fri., 8:00–9:10 A.M.

Psychology

Intersession

F.—PSY.—S.11a GENERAL PSYCHOLOGY

Peter E. Comalli, Jr., *Lecturer, Evening College*

An introduction to the principles of human behavior.

Clark Hall 304 Mon. through Fri., 9:00 A.M. and 2:00 P.M.

*Double Course, two classes daily, through summer session.

Summer Session

PSY.—S.103b THE ABNORMAL PERSONALITY

Morton Wiener, *Associate Professor of Psychology*

The course will be devoted to a study of the development of the abnormal personality and a survey of the major types of abnormal behavior.

Clark Hall 305

Mon. through Fri., 9:15–10:25 A.M.

PSY.—S.172a PERSONALITY DEVELOPMENT

Robert W. Baker, *Associate Professor of Psychology*

A survey of the various theoretical approaches to the study of personality, with particular emphasis on trait theories, typologies, field theory, and psychoanalysis. Also considered are the determinants of personality development and methods of appraising personality.

Clark Hall 301

Mon. through Fri., 8:00–9:10 A.M.

PSY.—S.190 INDUSTRIAL PSYCHOLOGY

Morton Wiener, *Associate Professor of Psychology*

A course dealing with the psychological factors underlying the interaction of individuals in their everyday working activities. Motivations, attitudes and values, as they affect human relations in industry will be discussed. Problems of industrial morale and problems of supervisory relationships will be considered, as will be the use of psychological tests and other techniques in job evaluation, personnel selection and placement.

Clark Hall 220

Mon., Wed. and Fri., 6:00–7:50 P.M.

PSY.—S.350 RESEARCH IN PSYCHOLOGY

Graduate research studies may be carried out under the direction of available staff members during the Summer School. The course is primarily for those who have been previously enrolled in the Graduate School. Approval by the staff member will be required prior to admission.

Sociology*Summer Session*

SOC.—S.16 SOCIAL PROBLEMS

Frederick W. Killian, *Associate Professor of Sociology*

This course will investigate problems of American life with comparative material from other cultures. Problem situations will be stressed with material from original sources. Subjects covered will include economic and political problems, as well as crime and delinquency, family, health, population, and minority groups and problems of urbanization.

Clark Hall 212

Mon. through Fri., 10:30–11:40 A.M.

SOC.—S.131 HUMAN RELATIONS AND POLICY MAKING IN BUSINESS
(B.A.—S.131) AND INDUSTRYFrederick W. Killian, *Associate Professor of Sociology*

The course description is given under Business Administration.

Clark Hall 215

Mon. through Fri., 11:45 A.M.–12:55 P.M.

CLARK UNIVERSITY
SUMMER SCHOOL

*Introduction to
Western Civilization*

A STUDY COURSE AND TOUR OF

Europe

Further inquiries should be addressed to

DIRECTOR OF SUMMER SCHOOL

Clark University
Worcester 10, Mass.

July 2 — September 8

1958

Introduction to Western Civilization
3 semester hours credit

Tour Director: James S. Edwards,
Associate Professor of German

A lecture course with field trip Europe of 53 days on land and 16 at sea. Lectures and discussion groups will be held daily on the Eastbound voyage, day orientation during the land tour and personal leadership to all points of interest by the Director. On the return voyage sessions will be held and a three hour examination will be given, divided between the last two days at sea.

A limited number of auditors will be permitted to join.

Designed as an extension of General Education, the method will be to combine the customary formal instruction with exposure to places and scenes in which Western Man's experience actually took place. Included will be a survey of Western Man's institutional development and life with emphasis on his expressive forms and activities in Art, Literature and Music.

The group will travel through six countries: France, England, Belgium, Germany, Austria and Italy, it will visit the principal museums, monuments and cities. It will do this not with a view of making an exhaustive study of each individual work of art but rather determining the unity in the diversity of the pattern. Visits to museums will therefore be selective, the characteristics of an age will be studied rather than individual artists.

Whenever possible the group will attend concerts, the opera and the theater; leisure time will provide opportunity for relaxation and enjoyment of the scenery.

The Tour Director, who was born in England, is intimately acquainted with both pre- and postwar Europe, having studied at the University of Munich and travelled extensively there. He has conducted small tours to the cultural centers of the continent and will again be in charge of the Clark tour. He has been a member of the German Department at Clark since 1947 and Director of Dramatics for the past seven years. Among his most popular courses are: Germanic Civilization and The Theater in Western Civilization. Professor Edwards is particularly suited to introduce the American student to the cultural and educational advantages to be derived from a tour of Europe.

Total cost of the study tour from departure at New York to return there \$1125, \$200 with application, balance of \$925 on or before May 1, 1958. The tuition fee of \$70 (with or without credit) is included in the total cost.

ITINERARY

- July 2 NEW YORK/ENROUTE
- 9 SOUTHAMPTON/LONDON
- 10 LONDON
- 11 LONDON - SHAKESPEARE COUNTRY
- 12 LONDON - WINDSOR
- 13 LONDON - At leisure
- 14 LONDON/BRUGES
- 15 BRUGES/ANTWERP
- 16 ANTWERP/BRUSSELS
- 17 BRUSSELS/COLOGNE
- 18 COLOGNE/KOBLENZ
- 19 KOBLENZ/FRANKFURT
- 20 FRANKFURT/HEIDELBERG
- 21 HEIDELBERG/ROTHENBURG via
Würzburg.
- 22 ROTHENBURG/MUNICH
- 23 MUNICH
- 24 MUNICH - At leisure
- 25 MUNICH - FULL DAY EXCURSION TO
THE BAVARIAN CASTLES.
- 26 MUNICH/SALZBURG

Tips: Wherever possible portorage is provided at railroad, motor-coach and steamer stations. Porterage within hotel is included.

Taxes: Government taxes on hotel services when included in hotel bills

Exclusions: Expenses and items not specifically mentioned in this sheet are not covered including but not limited to: Passport charges, items not on group menu, laundry, mineral water, tips on board trans-atlantic steamer.

CLARK UNIVERSITY

Sixty-seventh Annual Commencement

Worcester Memorial Auditorium

SUNDAY, JUNE 9, 1957



WORCESTER, MASSACHUSETTS

Order of Exercises

Prelude

Allegro Moderato

Handel

Arioso

Bach

Processional

Grand March (from *Tannhauser*)

Wagner

Invocation

THE REVEREND CHARLES LYNCH PHILLIPS

Welcome by the President

DR. HOWARD BONAR JEFFERSON

Commencement Address

DR. ROBERT ULICH

James Bryant Conant Professor of Education,
Harvard University

Conferring of Degrees

Benediction

THE REVEREND MR. PHILLIPS

Recessional

Festival March

Best

*The audience will kindly remain
standing during the Recessional*

Organist: Clifford Fowler Green

**Candidates for the Degree of Bachelor of
Science in Business Administration**

John Francis Killoran
Raymond Kenneth Moran

Royal Francis Paquette
Henry Clarence Rivers

**Candidates for the Degree of Bachelor of
Science in General Studies**

Barbara Jeanne Coté
Alice Veronica DePaul
Richard Paul Freeman

Richard Charles Maguire
Leonard Francis Sears
Alice Pailoon Shamgochian

**Candidates for the Degree of Bachelor of
Business Administration**

David Bernard Brennan
Peter Baird Chamberlain
Donald William Charlesworth
Richard Wendel Parsons
Clinedinst
*Lee Durant Dahlstrom
Robert William Dawson
Michael Stephen Dedes
*Ginés del Olmo
Ellis David Dworman
Lawrence Freed
Richard Francis Galvin
William John Gauld, Jr.
Richard Leonard Gremley
Christine Mary Hadjoglou
*Roy Lees Harper, Jr.
Donald Melvern Johnson
John Nasto Katori

Nunzio Anthony Lamberto
Frank Milton Look
Eugene Emile Loubier
Milton Stanton Marks
David Earl Maxham
Richard John Millington
Paul Paltrineri, Jr.
John Ronald Pitt
James John Saitas
Robert Ulysses Sawtelle
~~Irving Bernard Sokov~~
Arnold Newton Spurr
Frederick Henry Starzyk
Carl Robert Swenson
Joseph Ludger Toussaint
Charles Bradley Vinkemulder
Richard Terence Wiley

**Candidates for the Degree of Bachelor of Business
Administration with Honors**

Departmental Honors

Paul Jay Shapiro, *Business Administration*

Cum Laude

Milton Howard Raphaelson
Philip Carleton van Leeuwen

**As of June 3, 1956*

Candidates for the Degree of Bachelor of Arts

- | | |
|-----------------------------|-----------------------------|
| Silverio Pedro Almeida | *Ira Stephen Lawrence |
| William Neil Aulson | Arthur Brown Lee, Jr. |
| Joyce Ann Baker | Bruce Edward Levison |
| Joseph Irvin Berman | David Lawrence Lipkin |
| Charles Irving Bloomgarden | Joan Ann Litsky |
| Lewis Eugene Bogage | John Leo Loughlin |
| Robert Aram Bogigian | Janyce Anne Mielke |
| *Jerome Jerald Bolten | *Mary Byrne Morgan |
| Marshall Holland Bruce | Donald Lyman Morrison |
| *Ronald William Brust | Edward Francis Mosher, II |
| Barbara Bryant | Frank Burton Myska |
| Lorna Little Carter | John Francis Nichols, II |
| *Martin Bert Cohen | Yukiko Suzuki Nichols |
| Delores Felice Collins | *Samuel Joseph Noumoff |
| William George Cooper, Jr. | Marjorie Louise Olson |
| Edward Charles Cooperman | *David Dill Oswald |
| John Everett Culbert | Judith Ann Palmer |
| Sidney Ernest DeBoer | Franklin David Parmenter |
| Nicholas Emanuele DeNigris | Frank Edwin Pawlina |
| Peter Michael D'Errico | David Allen Peirce |
| Wendy Nyerdi Wang Djeu | Adrienne Elizabeth Petridis |
| Robert Walter Duffy | Philip Louis Philip |
| Paul Ward English | Joan Ruth Pinchak |
| Erna Marie Erikson | George Henry Proffitt |
| Elaine Elizabeth Foster | Ronald Harry Rogstad |
| Stephen Herbert Gens | Leonard Arthur Schoolman |
| William Michael Gibbons | Frederick Seligman |
| Henry Joseph Guerin | Dorothy Joan Sergeant |
| Herbert Hoover Haddad | *William Charles Sigalis |
| Edythe Marilyn Harvey | Alan Michael Snyder |
| Elmer Roger Haskell | Mary Ann Steffon |
| Carolyn Edith Haupt | Edith Bresnick Steinberg |
| Burton Paul Hoffner | Morton Steinberg |
| June Ingrid Johanson | Norman Steinberg |
| Carle Albert Johnson, Jr. | *Allan Martin Streichler |
| Robert Arthur Johnson | Edward Patrick Sullivan |
| Richard Norman Jolie | *Helen Theresa Sullivan |
| *George Charles Jones | Nobuhiko Takeuchi |
| Vivian Sylvia Kajander | Barbara Ann Tucker |
| Helen Kiakis | Takeshi Utsunomiya |
| George Herbert Kronberg | Joan Warfield |
| William Bruce Laakso | Robert Lewis Wright |
| Barbara Joan Schultz Lander | Seung Soo Yun |
| Anna Teresa Latino | |

**As of June 3, 1956*

Candidates for the Degree of Bachelor of Arts with Honors

Departmental Honors

Martin Arons, *International Relations*
Robert Gerrol, *Government*
Richard Allen Hanson, *Geography*
David Goodwin Hayes, *International Relations*
Richard Skerry Johnson, *Geography*
Herman Abraham Makler, *English*
William Patrick Smelewicz, *Sociology*

Cum Laude

Inge Komers Broverman, *and with High Honors in Psychology*
George Brammer Dawson, *and with Honors in Geography*
Rosaline Shirley Feinstein, *and with Honors in Psychology*
Diana Garon
Virginia Marie Haas
Donna Marie Logue, *and with High Honors in Geography*
Edward Marshall Morin
Fred Leonard Resh
Eugene Mehlman Scheel, *and with High Honors in Geography*
Bernard David Shapiro, *and with Honors in Government*
Victor Hugo Strandberg, *and with High Honors in English*
Gerald Melvin Weisenberg, *and with Honors in English*
Donald Roland Young
Margaret Ann Ziarko

Magna Cum Laude

Joseph Ernest Napolitano
Patricia Rose Power
Theodore Reuben Smith

Summa Cum Laude

Sylvie June Eriksson, *and with High Honors in History*

Candidates for the Degree of Master of Arts in Education

Robert Vincent Carey
Charlotte Roslyn Cohen
George Alfred Coupe
Nicholas Remsen Cowenhoven
John William Daly
George Andrew Downes, Jr.
Elizabeth Mary Foley
John Henry Fulgoni
Wilfred Richard Granger
Nancy Ann Johnson
Demeter Theodore Karaku

Justin John Kelley
William James Mara
Arthur Leonard Mullin
James Daniel O'Leary
John Powel Shaw
Helen Leblanc Sondrol
Herbert Stephen Sperry
Anna Kontulis Stavros
Donald William Sullivan
Paul Joseph Vernon
John Frederick Warner, Jr.

Candidates for the Degree of Master of Arts

Biology

Benson Kane

Chemistry

Richard Lyman Gustafson

Benjamin Joseph Intorre

Henry Ernest Rosenberg

Economics and Sociology

John Donald Coupe

Chao Fan Hsu

Eisuke Nakayama

James Alexander Sherbaniuk

Homer Philbrick Wentzell

Geography

Roland John Fuchs

John Peter Johnson, Jr.

Edith Miriam Levo

Richard Arnold Lockhart

Salvatore John Natoli

Edward Renny

Fredric Arnold Ritter

Victor Wallace Sim

History, Government, and International Relations

Winthrop Donaldson Jordan

Thor Hilding Kuniholm

Norman Hall Pollock

Leroy Warren Rand

Psychology

Arlene Lee Aron

Donald Monroe Broverman

Frank Edward Clarkson

Joseph Henry McFarland

Herbert Joseph Nickel

Janet Switzer

William Vogel

Candidates for the Degree of Doctor of Philosophy

Chemistry

Amilcare Biancheria

Roger Gerard Lacoste

Daniel Walter Thomas

Economics and Sociology

John Joseph Breen, Jr.

Geography

Monir Saad Girgis

Mohammed Halim Khan

Telesforo Wisco Luna, Jr.

Richard Ernest Murphy

Robert Folsom Perry, Jr.

Anthony Sas

Grady Oscar Tucker, Jr.

History, Government, and International Relations

Raymond Joseph Marion

Godwin Anibeze Odenigwe

Psychology

Roger Maurice Albert Bibace

Howard Thomas Blane

Charles Hersch

Donald Max Krus

Harriett Amster Podell

Jerome Edward Podell

Conferring of Honorary Degrees

ROBERT ULICH

Presented by Vernon Jones

Doctor of Letters

CHARLES LYNCH PHILLIPS

Presented by Robert Stanley Illingworth

Doctor of Humane Letters

GEORGE NATHANIEL JEPPSON

Presented by Robert Francis Campbell

Doctor of Laws

THE PRENTISS CHENEY HOYT PRIZE IN POETRY

First Prize: Diane Barbara St. Jean

Second Prize: Carle Albert Johnson, Jr.

THE LORING DODD PRIZE IN DRAMA

Sidney Ernest DeBoer

THE HOMER P. LITTLE AWARD IN GEOLOGY

William Elliot Topkin

THE SANFORD MEMORIAL SCHOLARSHIP

Melvyn Herbert Zarr

Bio. S.17 General Ecology
 B.A. S.170 Management of Small Business
 B.A. S.183a Management-Labor Relations
 Eng. S.11a English Comp. and Literature
 Eng. S.103 Comic Spirit in Eng. and Am. Lit.

F.A. S.122 Introduction to Symphonic Music
 Hist. S.130a Political History of the U.S.
 Hist. S.213 European Dipl. Hist., 1848-1918
 Phil. S.116 Readings in Existentialism
 Psy. S.11a General Psychology

JUNE 30 — SUMMER SESSION — AUGUST 15

Morning Classes Meet Daily Monday through Friday—3 Credits

8:00 Bio. S.130 Microbiology
 to Bio. S.244 Biochemistry
 9:10 Ed. S.290b Philosophy of Education
 Geo. S.201b Prob. Areas in the World

9:15 B.A. S.109 Sales Management
 to Ed. S.20 Geography in Education
 10:25 Ed. S.201b Educational Psychology
 Eng. S.111 Survey of Am. Lit.

10:30 Bio. S.221 Embryology
 to B.A. S.125b Retailing Principles
 11:40 Ed. S.225 Demonstration Teaching
 Eng. S.126 Mod. Am. and Brit. Drama

11:45 B.A. S.131 Human Relations in Bus.
 to Ed. S.228 Guidance and Evaluation
 12:55 F.A. S.13a Twentieth Century Music

1:30 Geo. S.191 Cartography
 P.M. Geo. S.291 Cartography

Gov. S.25a Comparative Government
 Phil. S.290b Philosophy of Education
 Psy. S.172a Personality Development

Geo. S.20 Geography in Education
 Hist. S.233 The West in Am. History
 Phil. S.121 Classical Am. Philosophers
 Psy. S.103b Abnormal Personality

Geo. S.285a Geography of Europe
 Hist. S.237 Economic Hist. of the U.S.
 Soc. S.16 Social Problems

Geo. S.10a Principles of Geography
 Hist. S.238 New Viewpoints in Am. Hist.
 Soc. S.131 Human Relations in Bus.

Evening Classes Meet Monday, Wednesday and Friday—3 Credits

6:00 Ec. S.13 Money and Banking
 to Eng. S.106 Contemp. Amer. Fiction
 7:50

8:00 B.A. S.17 Public Speaking
 to B.A. S.181a Industrial Management
 9:50

Ec. S.211b Comparative Econ. Systems
 Eng. S.12 Public Speaking

DOUBLE TIME COURSES

Two Class Meetings Monday through Friday

Year Courses—6 Weeks—June 30-August 15 6 Credits

Fr. S.12 Intermediate French 9:15 & 2:00
 Fr. S.14 Readings in French Lit. 9:15 & 2:00
 Ger. S.11 Introductory German 8:00 & 11:45
 Ger. S.12 Intermediate German 9:15 & 2:00
 Sp. S.11 Introductory Spanish 9:15 & 2:00
 Sp. S.12 Intermediate Spanish 9:15 & 2:00
 B.A. S.16 Business Statistics 9:15 & 2:00
 Math. S.11 Freshman Mathematics 9:15 & 2:00

NOTE: Travel Course to Europe GE. S.144, Introduction to Western Civilization—Leaves New York July 2



WELLS BINDERY INC.
WALTHAM, MASS.
FEB. 1962

